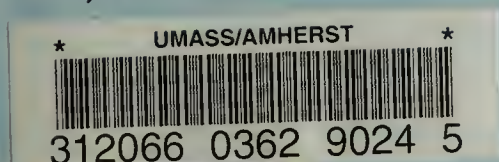


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## **Right-of-Way**

### **Vegetation Management Plan (VMP)**

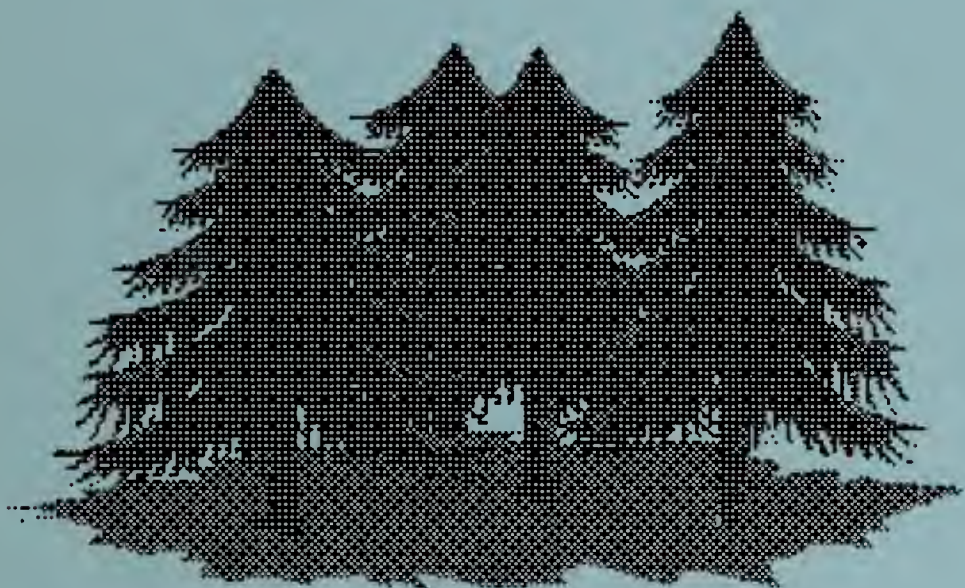
**for Western Massachusetts Electric Company,**

**Holyoke Water Power Company,**

**and**

**Holyoke Power and Electric Company**

**for years 1999 through 2003**



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**RIGHT OF WAY**

**VEGETATION MANAGEMENT PLAN (VMP) FOR**


**WESTERN MASSACHUSETTS ELECTRIC COMPANY**

**HOLYOKE WATER POWER COMPANY**

**AND**

**HOLYOKE POWER AND ELECTRIC COMPANY**

**FOR YEARS 1999 THROUGH 2003**



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## I. INTRODUCTION

This Vegetation Management Plan (VMP) describes Western Massachusetts Electric Company's (WMECO), Holyoke Water Power Company's (HWP), and Holyoke Power and Electric Company's (HPE) (hereinafter collectively referred to as "The Company") integrated vegetation management program for transmission and distribution rights-of-way and local distribution lines over the 5 year period from 1999 through 2003 in compliance with the Commonwealth of Massachusetts 333 CMR 11.00, Right of Way Management regulations.

## II. GOALS AND OBJECTIVES

This section summarizes the goals and objectives of this vegetation management plan.

### A. Goals of Vegetation Management Plan

The primary goal of this electric utility right-of-way management plan is the control of vegetation and establishment of standard operating procedures to ensure the maintenance of safe and uninterrupted electric service through its transmission and distribution lines. Physical and visual access must also be assured in order to permit routine and emergency line maintenance and operations which are essential to preserve continuity and reliability of service.

This plan is a guiding document which provides structure and sensibility to the Yearly Operational Plans (YOP's). A YOP will be prepared each year to describe the detailed vegetation management operation for the calendar year consistent with the terms of the VMP's.

### B. Objectives of Vegetation Management Plan

The principal objective of woody vegetation management is to selectively eliminate that woody vegetation which may potentially short circuit overhead conductors on the right-of-way. This management program will accomplish that objective at the lowest cost to its customers with due regard for worker safety, protection of public health and without unreasonable adverse effects on the environment, including the protection of sensitive areas. Selective control benefits wildlife habitat for many species of animals by encouraging plant communities that provide food and cover. The program is also designed to maintain acceptable appearance of the right-of-way and to minimize erosion by allowing the development of low shrubs and ground cover. The low shrubs and ground cover inhibit the re-establishment of target tree species.

The foregoing will be accomplished in full compliance with all applicable state and federal laws and regulations.

#### C. Sensitive Areas

Special protection is afforded sensitive areas in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects. Herbicide use is limited near public and private water supplies, standing or flowing water, wetlands, and agricultural and habitated areas.

#### D. Public Involvement

Public involvement is imperative to the development of a vegetation management plan. Regulatory procedures have been established which guarantee all interested parties ample opportunity for input and review. In total, this vegetation management plan provides a comprehensive and integrated framework which protects the environment and the health, safety and welfare of the Citizens of the Commonwealth.

#### E. Location of Rights-of-Way

The Company's service area extends from the Berkshire Mountains bordering New York state to the highly urbanized area surrounding Springfield, and reaches in a north-south direction from the Vermont-New Hampshire border to Connecticut.

The Massachusetts portion of Northeast Utilities (NU) is comprised of three subsidiaries located in western Massachusetts. WMECO's transmission and distribution facilities provide electrical service to over 195,400 customers across western Massachusetts. HWP has transmission and distribution facilities which serve industrial customers in Holyoke. HPE has transmission and distribution facilities in, Holyoke, South Hadley and Chicopee.

Electric service is delivered through 400 pole miles of transmission lines, 150 pole miles of bulk supply distribution lines and 3,300 pole miles of local distribution lines. Transmission line rights-of-way are the backbone of the system and operate at voltages ranging from 69,000 to 345,000 volts. They provide the connection between generating plants and area substations and are inter-connected with the transmission facilities of other utilities. Bulk supply distribution rights-of-way operate at either 23,000 or 13,800 volts. They provide the link between substations and local distribution lines which deliver electrical energy to customers. Approximately 90% of the local distribution lines are located along roads



and driveways, bordering on a variety of privately and publicly owned land. The other 10% are off-road lines which cross property with a wide range of land uses including forestland, agricultural and recreational areas, and backyards.

The Company's rights-of-way are located in the following 72 municipalities:

Agawam	East Longmeadow	Longmeadow	Southampton
Amherst	Erving	Ludlow	South Hadley
Ashfield	Gill	Middlefield	Southwick
Becket	Granby	Montague	Springfield
Belchertown	Granville	Montgomery	Stockbridge
Bernardston	Greenfield	New Ashford	Sunderland
Blandford	Hadley	Northfield	Tolland
Buckland	Hampden	Otis	Tyringham
Cheshire	Hancock	Pelham	Warwick
Chester	Hatfield	Peru	Washington
Chesterfield	Hinsdale	Pittsfield	Wendell
Chicopee	Holyoke	Plainfield	Westfield
Colrain	Huntington	Richmond	Westhampton
Conway	Lanesborough	Russell	West Springfield
Cummington	Lee	Sandisfield	Whately
Dalton	Lenox	Savoy	Wilbraham
Deerfield	Leverett	Shelburne	Windsor
Easthampton	Leyden	Shutesbury	Worthington

### III. IDENTIFICATION OF TARGET VEGETATION

The primary objective of electric utility vegetation management is the selective control of those woody plants capable of growing tall enough to interfere with the conductors and access. This section identifies this tall-growing, "target vegetation" by plant species as related to its location on transmission or distribution rights-of-way.

#### A. Plant Species

For the purposes of electric utility vegetation control, plant species are generally divided into two groups, undesirable species capable of interfering with the conductors or access, and desirable species which normally cannot. It is the contractor's responsibility to be knowledgeable about and to instruct his crews in the identification of desirable and undesirable species and the various herbicide control techniques necessary for integrated vegetation management. Electric company personnel manage the contractors performing woody vegetation control, and ensure that contract conditions are met. These groups are defined

below:

## 1. Undesirable Species

Undesirable species include trees, tall maturing shrubs, and vines. Trees are woody plants normally maturing at 20 feet or more in height, usually with a single trunk, un-branched for several feet above ground and with a definite crown. Tall maturing shrubs are woody plants maturing over 12 feet but less than 20 feet in height and presenting a generally bushy appearance because of their several erect spreading or prostrate stems. Undesirable tree species include, but are not limited to, poplar (Populus spp.), pitch pine (Pinus rigida) and red maple (Acer rubrum) which are capable of growing into the conductors. Tall maturing shrubs include, but are not limited to, sumac (Rhus spp.), speckled alder (Alnus rugosa), and buckthorn (Rhamnus spp.). Woody vines such as wild grape (Vitis spp.) and Virginia creeper (Parthenocissus quinquefolia) are also controlled when they risk electric reliability by climbing structures, poles and guy wires.

## 2. Desirable Species

Desirable species include low maturing shrubs, ferns, grasses, and herbs. Low maturing shrubs are woody plants normally maturing no taller than 12 feet in height and presenting a generally bushy appearance because of their several erect spreading or prostrate stems. Most shrubs such as mountainlaurel (Kalmia latifolia), highbush blueberry (Vaccinium corymbosum) and hazelnut (Corylus americana) usually cannot grow into the conductors and are normally preserved and encouraged to grow. Non-woody plant species such as ferns, grasses, herbs and wildflowers benefit from the reduced competition for space and are allowed to flourish.

The following is a partial list of the most common shrub species that are normally preserved.

Hazelnut	Huckleberry
Gray Dogwood	Spicebush
Juniper SPP	Pinxterbloom Azalea
Viburnum SPP	Mountainlaurel
Sweetfern	Redosier Dogwood
Bayberry	Highbush Blueberry
Lowbush Blueberry	



## IV. METHODS OF VEGETATION MANAGEMENT AND RATIONALE FOR USE

This section describes the intended methods of vegetation management and rationale for use, including vegetation control techniques, equipment proposed for use, timing and other control procedures. An integrated approach to vegetation management has been developed which minimizes the use of herbicides through a balanced mix of cultural practices, mechanical control, and a carefully planned program of chemical control. State of the art techniques, time tested methods, and a low input approach to vegetation control are incorporated into an innovative and interdisciplinary plan. Above all else, a major commitment is made to the protection of human health and safety, and the prevention of unreasonable adverse effects on the environment. Vegetation control is scheduled so rights-of-way are inspected at 4 to 5 year intervals and maintained if necessary to ensure the integrity of the electrical system.

### A. Foliar herbicide

description: An herbicide mixture is applied to leaves of undesirable plants. Application is typically made using hydraulic spray equipment mounted on all terrain vehicles

uses: Used on medium to high density brush in non-sensitive areas.

pros: High volume application is efficient where the brush density and/or terrain limits access. Provides a good way to gain control of high density areas where brush is not too tall.

cons: Less selective than other methods. Poor visual impact (may brown-out large areas). Weather dependent (i.e., cannot apply during precipitation or wind exceeds 10 mph). Limited application season (apply when plants are in full leaf, June through September).

### B. Low volume foliar herbicide

description: Small amount of herbicide mixture is applied to leaves of individual, undesirable plants. Application is usually made with hand-pump or motorized "backpack" low-pressure sprayers. Since a smaller amount of mixture is used in the "low volume foliar" method than in the "foliar" method, the mix contains a higher concentration of herbicide. However, an equal amount of the active ingredient is applied to the target plants.

uses: Useful in general and some sensitive areas on individual targets less than 12' in height.

pros: Efficient, effective method of selectively controlling individual plants.

cons: Limited application season (apply when plants are in full leaf), weather dependent, efficiency is lost in areas with a high density of undesirable plants.

#### C. Low volume basal herbicide

description: A small amount of herbicide and carrier is applied to lower 12" of individual stems. Applications are made with hand operated low pressure backpack equipment.

uses: Used in general and some sensitive areas.

pros: Applications can be made year round if the root collar is exposed, little or no spray drift.

cons: Basal applications are generally inefficient in medium to high stem-density areas. Volatility may be a problem in summer heat.

#### D. Cut stump herbicide

description: A small amount of herbicide is applied directly to the cambium layer of freshly cut stumps. Applications may be made with a hand-held spray bottle, hand-operated sprayer, or a paint brush. Done in conjunction with mechanical cutting.

uses: Used in general and some sensitive areas (especially where aesthetics is a concern), where undesirable brush has been mechanically cut.

pros: Applications can be made year round, little or no spray drift, no visual impact (no brownout).

cons: Not effective in high density areas where cut stumps are small, or cannot be found.

#### E. Mowing

description: Brush is mechanically cut using a (large) machine with a cutting head attached to a large all-terrain rubber tired or tracked vehicle

uses: Used in areas accessible to large motorized vehicles, especially in areas of high density and/or tall undesirable stems.

pros: Can be performed year-round, excellent way to re-establish control of overgrown areas.



cons: Poor visual impact (debris and mangled roots/stems left), not good in rocky, hilly, residential, or wet areas, tends to be non-selective (cuts desirable weeds/shrubs/grasses as well as undesirable species), eliminates wildlife habitat, does not control root system, promotes aggressive re-sprouting.

#### F. Hand-cutting

description: Brush is mechanically cut using chain or brush saws or hand tools.

uses: Used in inaccessible, residential, and some sensitive areas.

pros: Can be performed year-round low visual impact; highly selective.

cons: High cost, does not control root system, promotes aggressive re-sprouting

### V. JUSTIFICATION OF HERBICIDE APPLICATIONS

The Company's vegetation management plan accomplishes the overall goal of continuous and reliable electrical service at a reasonable cost to its customers while placing primary importance on health, safety and environmental protection. Herbicides used on rights-of-way do not cause unreasonable adverse effects to health and the environment when used according to label directions. These herbicides are regulated by the U.S. Environmental Protection Agency and approved for use in Massachusetts by the State Department of Food and Agriculture. Approved herbicides are applied by contractors that are licensed/certified by the State, and in accordance with herbicide label directions and precautions. In addition, Company policy requires compliance with all applicable federal and state laws and regulations.

This section compares the relative benefits of herbicide control with other methods and describes why herbicides are an essential part of an effective vegetation management program.

#### A. Regulation of Stem Density and Plant Composition

Selective herbicide application provides significant advantages in decreasing the density of target vegetation and encourages the development of lower growing plant communities. A long-term reduction in the number of tree stems can be achieved by selectively treating only those undesirable species capable of interfering with the conductors and access. Herbicides are used which normally provide total control of both the above ground portion of target vegetation and the root system to prevent resprouting.

Compatible plant communities are developed by controlling regrowth of trees and occasionally tall maturing shrubs, and encouraging desirable species to dominate the right-of-way. Reducing undesirable plant competition for space allows low maturing shrubs, grasses, ferns, wildflowers, and herbs to spread into those areas previously occupied by target vegetation. The resulting dense low growing plant cover inhibits the germination and development of tall growing tree seedlings back onto the right-of-way. Compatible plant communities are thereby established which have an increased desirable species component and decreased undesirable component. In this manner, selective herbicide treatments tend to minimize the use of herbicides by generally reducing the number of target stems requiring control and potentially extending the time interval between treatments since the fastest growing, tallest maturing target species are eliminated.

## B. Wildlife Habitat

Selective herbicide applications significantly enhance wildlife habitat through the development of a complex, relatively stable plant community. Selective use of herbicide develops an environment and edge habitat beneficial to a wide variety of wildlife species. Deer, songbirds, and a multitude of other animals are known to use these rights-of-way for food, cover and natural corridors of travel.

## C. Economics

Economics refers to the costs of the various management techniques and the effectiveness of a particular method in controlling target species. Since effective control of target species is paramount to a successful vegetation management program, optimum control is that which is most cost effective over the long term.

A vegetation management plan based solely on cutting would be cost prohibitive. Hand cutting or mowing without the benefit of herbicides allows the root systems of cut-off sproutable stumps to remain alive. Dormant or adventitious buds located on the root or stumps quickly develop into sprouts, often during the same year of cutting. Instead of a single stem which existed prior to cutting, a cluster of sprouts soon becomes established. Since a developed root system is already present, the growth rates of the newly formed sprouts is much faster than the normal growth rate of the tree. In fact, dense sprouts approximately 7 feet tall have occurred during the first full growing season immediately following cutting.

A hand cutting or mowing program would require repeated reclearing of



brush due to resprouts with a one-time cost of approximately 1 to 5 times that for one herbicide application. This cost multiple is compounded further in that cutting must be performed 2 to 3 times more often than selective herbicide treatments. While warranted under certain conditions (e.g. in restricted sensitive areas, when weather is not appropriate, and when woody vegetation is too tall to herbicide treat effectively), the high per acre cost of cutting, lack of sprout control, and the necessity for more frequent maintenance reduce the long term cost effectiveness of cutting without herbicide treatment.

#### D. Erosion Control

A well-established, low-growing plant cover as provided by selective herbicide use also serves to control erosion by holding soil against wind and water movement. Conversely, under certain site conditions, continued non-selective cutting without the benefit of herbicides can leave the ground bare and vulnerable to soil losses.

#### E. Noise and Air Pollution

Reliance on cutting methods would result in increased noise and air pollution as compared to herbicide control. Since crews have to return more frequently for cutting, noise pollution and exhaust from vehicles and brush cutting equipment are a normal consequence. Also, fuel consumption for equipment increases.

#### F. Social Benefits

A variety of social benefits may be attained by managing vegetation through selective herbicide control. Buffer zones may be left to screen the public's view of the right-of-way.

As discussed in Article V.A, Regulation of Stem Density and Plant Composition, selective herbicide treatment tends to reduce the number of target stems requiring control. An integrated vegetation management program including selective control, normally results in less alteration of the existing plant community as compared to non-selective herbicide treatment or mowing. This generally decreases the use of herbicides and minimizes the potential for adverse effects on human health and the environment.

An integrated approach to vegetation management, including the prudent use of herbicides where appropriate, provides multiple use benefits. Opportunities for wildlife, recreation, nature study and aesthetic values such as viewing plants and animals may coexist when they do not interfere with safety and the operation of the right-of-way. In addition, agriculture,

residential, and industrial land uses extend onto the Company's rights-of-way.

#### G. Traffic Safety and Snow Removal

Maintaining target vegetation in accordance with Company specifications, which includes the use of herbicides along roadside powerlines, provides significant advantages in improving traffic safety. Roadways properly cleared of vegetation allows for driver visibility by controlling the dense, rapid resprouting from cut stumps, and reduces the potential of fallen branches and trees which may cause accidents. Properly maintained roadside powerlines also help provide a location for depositing plowed snow.

#### H. Integrated Vegetation Management

While there are several methods of controlling target vegetation, under certain site conditions the use of herbicides is not appropriate and cutting operations are conducted without them. Also, handcutting and mowing have a certain range of site conditions under which they are applicable. Conditions which determine the control technique include sensitive areas, weather, visual aesthetics, time of year, height and/or density of vegetation, access, etc. Since these factors vary from one right-of-way to the next, the proper control technique must be suited to the actual site conditions. These factors are recognized in selecting the appropriate control technique applicable to the right-of-way. A full description of the Company's Integrated Vegetation Management program is provided in Article VIII.

### **VI. IDENTIFICATION OF SENSITIVE AREAS AND CONTROL STRATEGIES PROPOSED FOR SENSITIVE AREAS**

This section defines sensitive areas encountered along rights-of-way, provides references and sources for identifying sensitive areas, outlines the method used to identify sensitive areas, and lists the control strategies proposed for sensitive areas.

The DFA and DEP have developed a list of recommended herbicides (See Appendix D) for use in sensitive areas within rights-of-way. These herbicides are characterized by their low: toxicity, mobility, and persistence. The Company will use only chemicals from this list when treating in sensitive areas.

In 1991, following a study of the impacts of right-of-way vegetation management on wetlands, the DFA determined that integrated vegetation management, using herbicides recommended for sensitive areas does not pose an unreasonable adverse impact to wetlands. In addition, the DFA required a second study for the



purpose of collecting data on the environmental fate of herbicides. In 1995, the DFA issued its final determination (Appendix E) that an integrated vegetation management program, incorporating the elements listed in VI.D.5.f. will “result in less impacts to wetlands than exclusive use of mechanical control methods”.

A. Definition of Sensitive Areas

Sensitive areas are defined in 333 CMR 11.02 as "any areas, within rights-of-way, including but not limited to the following, in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects:

- (a) within the primary recharge area of a public drinking water supply well
- (b) within four hundred (400) feet of any surface water used as a public water supply
- (c) within one hundred (100) feet of any appropriately marked private drinking water supply well
- (d) within one hundred (100) feet of any standing or flowing water
- (e) within one hundred (100) feet of any wetland
- (f) within one hundred (100) feet of any agricultural or habitated area."

The following table shows the "no herbicide treatment zone" and the surrounding "limited herbicide treatment zone" within each sensitive area type.

**SENSITIVE AREA - NO HERBICIDE AND LIMITED HERBICIDE TREATMENT ZONES**

	<b><u>No Herbicide Treatment Zone</u></b> Within 400 feet.	<b><u>Surrounding Limited Herbicide Treatment Zone</u></b> Between 400 feet and the outer boundary of its primary recharge area.	<b><u>Where Identified</u></b> On YOP maps
<b>PUBLIC GROUND WATER SUPPLY WELL</b>			
<b>SURFACE WATER USED AS A PUBLIC WATER SUPPLY</b>	Within 100 feet.	Between 100 and 400 feet.	On YOP maps
<b>PRIVATE DRINKING WATER SUPPLY</b>	Within 50 feet.	Between 50 and 100 feet.	In YOP well list and on site
<b>STANDING OR FLOWING SURFACE WATER</b>	Within 10 feet.	Between 10 and 100 feet.	Identify on site
<b>WETLAND</b>	Within 10 feet of standing water.	Between 10 feet of water and 100 feet outside wetland boundary	Identify on site
<b>AGRICULTURAL OR HABITATED AREAS</b>	No high pressure foliar applications within 100 feet during the growing season.	Only low pressure foliar or stem applications within 100 feet during the growing season.	Identify on site

## B. Reference and Sources for Identifying Sensitive Areas

The following references and sources may identify the location of public ground water supplies, public surface water supplies, private drinking water supplies, and the general location of wetlands. Standing and flowing water, and agricultural and habitated areas are readily identified in the field.

1. Massachusetts Department of Environmental Protection (DEP) Watershed Maps (scale 1:25,000) and/or digital data layers; delineates the perimeter of public watersheds and the location of public wells.
2. Massachusetts DEP Wetland Restriction Maps (scales usually 1:1,000); approximately 15% of the State has been mapped; available from DEP, Division of Wetlands and Waterways.
3. Municipal Maps and Records (scales vary).
4. Regional Planning Agencies' 208 Water Quality Survey Wetland Maps (scales vary); not all planning agencies have copies.
5. U.S. Army Corps of Engineers (COE) Wetland Maps (scales vary); prepared for specific COE projects.
6. U.S. Fish and Wildlife Service National Wetlands Inventory Maps (scales 1:24,000 and 1:25,000); available from University of Massachusetts at Amherst, Cartographic Information Research Services.
7. U.S. Geological Survey Topographic Maps (scale 1:24,000); identifies major wetland areas.
8. Natural Resource Conservation Service Maps (scales vary); available for most communities.
9. William McConnell Land Use Maps (scale 1:25,000); delineates wetlands using aerial photos; available from the University of Massachusetts at Amherst, Dept. of Forestry and Wildlife Management (caution: some forested swamps not included in wetland classification).
10. DEP Wetland Restriction Maps (when available for western Massachusetts).
11. Wetlands Conservancy Program or UMass color infrared (1:22,000



scale) and black and white (1:5,000 scale) orthophotographs.

### C. Method for Identifying Sensitive Areas and Wetlands

The following procedure will be used to identify right-of-way sensitive areas:

1. The appropriate references and sources will be consulted to determine the location of public and private water supplies.
2. Public water supplies will be designated on YOP maps.
3. Prior to application, the location of these public and private water supplies will be identified in the field with the aid of the Yearly Operational Plan, by a "point person" in advance of the treating crew.
4. Prior to application, the treating crew will identify standing and flowing surface waters, and agricultural and habitated areas in the field except as provided by Article 7. below.
5. Appropriate distances will be measured from sensitive areas to identify no herbicide treatment zones and limited herbicide treatment zones.
6. Public and private water supplies will be marked as specified in the Yearly Operational Plan. Sufficient distance will be maintained between the point person and treating crew to prevent any inadvertent application in sensitive areas. Application will cease in that area if adequate distance cannot be maintained.
7. The procedure listed in this article will be used to identify wetlands when non-sensitive area herbicides are used to control vegetation.
  - a. The appropriate references and sources will be consulted to determine the general locations of wetlands. Precise boundaries must be determined in the field.
  - b. Prior to application, individual(s) qualified to delineate wetlands will identify wetland boundaries based upon plant indicator species.
  - c. Wetland boundaries will be kept in permanent Company records indicating where 50% or more of the vegetation community consists of wetland plant species.



- d. A "point person" in advance of the treating crew will measure appropriate distances from wetland boundaries to identify no herbicide treatment zones and limited herbicide treatment zones. These areas will be marked as specified by the Yearly Operational Plan. Sufficient distance will be maintained between the "point person" and treating crew to prevent inadvertent application in the wetland. Application will cease in that area if adequate distance cannot be maintained.

#### D. Control Strategies for Sensitive Areas

The following vegetation control strategies shall be used for sensitive areas.

1. General Provisions for Sensitive Areas and Non-Sensitive Areas
  - a. Herbicides will be used in accordance with this Vegetation Management Plan and the Yearly Operational Plan. These documents will be carried at all times with the applicator.
  - b. Herbicide treatment is made only by applicators who are appropriately certified or licensed by the DFA.
  - c. No foliar applications of herbicides will be used to control vegetation greater than 12 feet in height.
  - d. No touch-up applications are carried out except under the following conditions:
2. Touch-up applications occur within twelve months of the date of approval of the YOP.
3. The DFA, Conservation Commission, Board of Health, and chief elected official of the municipality are notified by registered mail at least twenty one days prior to any application.
4. No more than 10% of the initially identified target vegetation on the Company's right-of-way in any municipality is treated and the total amount of herbicide applied in any one year does not exceed the limits specified by the label or YOP.

5. Sensitive Area Restrictions

- a. A minimum of 24 months will elapse between herbicide applications in limited herbicide treatment zones of public ground water supplies, public surface water supplies, and private drinking water supplies.
- b. A minimum of 12 months will elapse between herbicide applications in limited herbicide treatment zones of surface waters, wetlands, and habitated and agricultural areas.
- c. No more than the minimum labeled rate of herbicide appropriate to the site, pest and application method will be applied in sensitive areas.
- d. Herbicides recommended for sensitive areas and guidelines for their use will be followed in accordance with the DFA's list of "Approved" herbicides for sensitive areas on rights-of-way.
- e. All other limitations placed on sensitive areas will be followed as provided by 333 CMR 11.04.
- f. Restrictions based on the results of two ROW impact studies:
  - 1. An integrated Pest Management (IPM) system, also known as Integrated Vegetation Management (IVM), as described in the Vegetation Management Plan and Yearly Operation Plan is utilized in wetland areas. The IPM system must, at a minimum, place emphasis on encouraging low growth plant species to discourage unwanted vegetation and, minimizing the frequency and amount of herbicide use by only controlling specific non-conifer tree species which will impact transmission line operation and access to the right of way.
  - 2. Herbicides may be applied by low volume foliar, basal, or cut stump methods. Foliar applications must include the use of appropriate drift reduction agents, and must not result in the off-target drift to non-target species. Basal and cut stump treatments may be conducted in those situations where the size of the vegetation, potential for off-target drift, or other considerations precludes the use of low-volume foliar applications. Cut stump and basal applications shall be restricted, when practicable, to periods when static ground water levels are low or

otherwise when conditions are less susceptible to potential contamination.

3. Herbicides are not applied to conifer species (pin, spruce, fir, cedar, and hemlock).
4. Carriers for herbicides do not contain any of the following petroleum based products: jet fuel, kerosene or fuel oil. Carriers will be subjected to review by the Department of Food and Agriculture and DEP through 333 CMR 11.04(d).
5. Only herbicides recommended by the Department of Food and Agriculture and Environmental Protection through CMR 11.04(d) may be used in sensitive areas.
6. Herbicides may only be applied by hand operated equipment containing no more than 5 gallons of diluent.
7. All other restrictions within sensitive areas remain in effect. In accordance with 333 CMR 11.04(1)(c), no person shall apply herbicides for the purpose of clearing or maintaining a right-of-way in such a manner that results in drift to any areas within 10 feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified under 333 CMR 11.04(2)(c)(3).
8. A minimum of twelve months must elapse between herbicide treatments. Only touch-up applications may be performed between twelve and twenty four months.
9. Approved Vegetation Management Plans and Yearly Operating Plans must be amended as needed to reflect the conditions of this determination.

## **VII. OPERATIONAL GUIDELINES FOR APPLICATORS**

The Company's policy requires contracted applicators to comply with all applicable federal and state laws and regulations. That includes 333 CMR 11.00 Right-of-Way Management.

The product label is the permit under which the product can be marketed. The



label is periodically updated and provides the most current information which is essential to the safe handling and application of the product. Use inconsistent with the labeling is punishable by fine and/or imprisonment.

This section provides a partial summary of operational guidelines as specified by federal and state training manuals, laws, and regulations applicable to right-of-way applicators. The best guideline in applying herbicides is for applicators to use their own awareness, good judgment and common sense.

#### A. Safety Precautions

The following general safety precautions should be taken when handling and using herbicides:

##### 1. Transporting Herbicides

- a. Containers should be placed and secured so they do not tip over or bounce around, in an enclosed lockable compartment.
- b. Do not transport food, feed, or people near herbicides.
- c. Department of Transportation regulations and appropriate state and local laws and regulations must be followed when transporting herbicides across state lines.

##### 2. Protective Clothing

- a. Some herbicides require no protective clothing but common sense should be followed.
- b. Follow label precautions.
- c. Wear protective spray clothes including a closely woven long-sleeved shirt, pants, or coveralls, shoes, and socks.

##### 3. Exposure

- a. Do not work in spray, drift, or run off unless thoroughly protected.
- b. Wash thoroughly before eating, drinking, or smoking.
- c. Work in pairs to help identify poison symptoms.
- d. Keep unauthorized people and animals out of the treatment



area while treating.

- e. Use proper application rates.

#### 4. Personal Hygiene

- a. Immediately wash off any herbicide spilled on the body.
- b. Change spray clothes daily.
- c. Keep spray clothes separate from other clothing.
- d. Wash spray clothes thoroughly.
- e. Take a shower at the end of each day.

#### 5. Herbicide Poisoning

- a. Keep herbicides out of the reach of children.
- b. Inform your doctor which herbicide you use.
- c. A well-equipped first aid kit should be available at the work site in case of emergency.
- d. If poisoned, call an ambulance or Massachusetts Poison Information Center, (800) 682-9211, and administer proper first aid.

### B. Filling and Mixing

Applicators are most often exposed to harmful levels of pesticides during filling and mixing operations since concentrated forms are handled. The following steps should be taken to avoid accidental exposure to the applicator or harm to the environment.

- 1. Follow all label directions.
- 2. Keep animals and unauthorized people out of the filling/mixing area.
- 3. Herbicide concentrates may not be handled, mixed, or loaded on a right-of-way within 100 feet of a sensitive area.
- 4. Wear protective clothes, rubber gloves, hat, respirator, and goggles

or face shield as specified on the label.

5. Change clothes immediately if concentrates are splashed or spilled on clothing.
6. Keep plenty of soap and water at your disposal for cleanup.
7. When pouring herbicides, keep your head well above the opening and position yourself so winds do not carry the pesticide into your face or body.
8. Carefully measure herbicides.
9. Use anti-siphoning devices such as check valves to prevent back flow of water into the filling source.
10. Do not allow the sprayer to run over when filling.
11. Triple rinse empty containers and utilize the rinsings whenever possible.
12. When mixing together two or more products, make sure they are compatible.

#### C. Equipment Calibration

The rate of delivery for each application technique is based primarily on the proper coverage of those plant parts specific to the treatment (i.e. uniform surface wetting without run-off for the low volume basal technique). Proper rates of application depend upon the following parameters:

1. Proper herbicide mixture.
2. Proper distance between the sprayer and target plant.
3. Proper pump pressure.
4. Correct nozzle type and opening size.

Equipment should be kept in good working order. Leaking or faulty pumps, tanks, hoses, nozzles and fittings should be repaired at once.

#### D. Weather

Applicators must give weather factors due consideration in their decision to

conduct spray operations on any given day or to continue when weather conditions become unsuitable. Rain water not only washes herbicides from target vegetation and reduces its effectiveness, but the resulting runoff could pose harm to the environment. High wind speeds increase the chances for drift to non-target plants, sensitive areas and the applicator. For these reasons, no herbicide is applied when the wind velocity is such that there is a high propensity to drift off target and/or during measurable precipitation.

#### E. Disposal

Surplus herbicides and empty herbicide containers shall be disposed of as described on the herbicide label.

To cut down on herbicide surplus, plan the spray operation so excess mix is not left over at the end of the day.

#### F. Record Keeping

The Occupational Safety and Health Act (OSHA) of 1970 requires employers of eleven or more employees to maintain records and prepare periodic reports concerning work related deaths, injuries, and illnesses. In the Commonwealth of Massachusetts, record keeping is required of all certified commercial applicators, and licensed applicators. Operational records must contain the following information (as specified in 333 CMR 10.16):

1. Place of application
2. Date of application
3. The brand or registered name of the pesticide
4. The EPA registration number of the pesticide
5. The amount of pesticide applied
6. The purpose for which the pesticide was applied
7. Method of application
8. The persons certified or licensed by the Department of Food and Agriculture who participated in the planning and execution of the application
9. Accidents or incidents resulting from use of a pesticide which caused



pollution

10. The amount of liability insurance carried and the name of the insurer
11. Any illnesses or injuries caused by or suspected to have been caused by pesticides and reported to the applicator.

#### G. General For All Herbicides

1. Label Instructions - follow all label instructions and the following:

- a. Designation of Approved Herbicide Mixture

Designation of herbicide (including manufacturer and brand name), carrier and mixture to be used will be provided by the Owner's Representative before the work is started.

- b. Restriction of Herbicide Treatment Application Due to Precipitation

In the event of precipitation, herbicide treating shall cease, and shall not resume until stems and foliage are dry.

- c. Specifically as Applicable to Basal Applications

Treating shall be performed only when the stems are dry and clear down to the root collar.

- d. Specifically as Applicable to Stem-Foliar Applications:

Restriction of Application Due to Precipitation - In locations which are not sensitive areas, any treating done within twelve (12) hours before the start of precipitation shall be retreated.

- e. Specifically as Applicable to Stump Treatment Applications:

Work Period - Do not apply during periods of precipitation.

### VIII. INTEGRATED VEGETATION MANAGEMENT PROGRAM

Integrated Vegetation Management (IVM) operates on the principle that undesirable vegetation is best controlled through an interdisciplinary combination of chemical and non-chemical methods. This principle is put into practice on the

Company's rights-of-way through a specialized herbicide program and cutting strategies designed to achieve long term selective, cultural, and natural control at the lowest cost to the electric customer without unreasonable effects on the environment and public health. This section describes these integrated approaches used to minimize the use of herbicides and yet effectively control target plant populations.

#### A. Cutting Without Herbicide Treatment

As discussed in Section V. H. Integrated Vegetation Management, the use of herbicides is not appropriate under all conditions. Therefore, herbicide applications are not conducted in no herbicide treatment zones, and when weather conditions restrict herbicide application.

#### B. Cultural Control

Perhaps most importantly, electric utility integrated management seeks to culturally control vegetation by regulating species composition and stem density. Selectively removing target tree species while leaving desirable low maturing shrubs results in a higher ratio of shrubs to trees and a long-term reduction in tree stem counts. By leaving desirable shrub species, a conscious attempt is made to encourage these plants through the subsequent reduction in competition for carbon dioxide, water, nutrients, and sunlight. Concentrating growth on these plants and maintaining thrifty, vigorous growth encourages their spread across the right-of-way. Cultural control relies on the concept that ecological principles can be used to control the natural stages of plant development. The interrelationships of nature are utilized along rights-of-way to establish relatively stable plant communities that tend to maintain themselves.

Some plants limit the available growing space for competing species through a process known as allelopathy. The roots of these plants, e.g. huckleberry and goldenrod, produce chemicals that are toxic to other plants.

Creating a low growing plant cover slows the natural progression of plant succession to a climax stage by preventing the invasion and development of undesirable tall growing trees. Desirable shrubs are also encouraged since they tend to be sun loving, shade intolerant plants which thrive in full sunlight. As low growing plant communities become more dense, the number of undesirable stems will be lower and the need for constant control of target vegetation is reduced.

The selection of desirable species allowed to remain on the site is another key to effective natural control. Control operations are based upon native species



present and suited to the actual site conditions. For example, basal applications tend to favor low growing shrubs such as blueberry, while foliar applications favor ferns, grasses, and herbs. By managing existing relationships between various plants and the environment, control procedures can be prescribed to foster the natural development evident on the right-of-way.

#### C. Selective Application Techniques

Highly selective application techniques are used to apply diluted herbicide mixtures directly to target vegetation with precision. The basal techniques are used to apply small amounts of herbicides using sprayer wands held within inches of each individual stem. In the cut stump method herbicide is applied only to the residual stump left after mechanical cutting. The amount of herbicide used in the foliar technique is minimized by proper spray nozzle pressure, large droplet size, spray adjuvants, and applications directed at individual tall-growing plants.

#### D. Selective Herbicides

A variety of selective herbicides are used which affect certain groups of plants with little or no affect on others. Limited spectrum herbicides are used to meet the particular vegetation and site conditions on the right-of-way. Some herbicides control broadleaved tree species while not affecting certain low maturing shrubs, grasses, and herbaceous plants. Other herbicides control broadleaved tree species but do not affect desirable grass species such as those found in lawns or some grain crops.

Adjuvants may be added to the herbicide mixture to help improve the performance of the active ingredient and reduce the chance of off-target drift.

Herbicides are normally mixed with a water or petroleum carrier and applied as a dilute mixture. In wetlands, either water or a refined petroleum product will be used as carriers. Fuel oil, jet fuel, and kerosene are not permitted for use as carriers in wetlands (See Appendix E).

#### E. Long Term Timing of Treatment

Proper timing of selective herbicide applications is important to the long term planning of vegetation management. To insure reliability, vegetation maintenance is scheduled to preclude encroachment of target vegetation into the conductors as allowed by current funding levels.

With approximately 6,707 acres of transmission and 1,096 acres of bulk supply distribution rights-of-way, approximately one-fifth must be maintained each year to assure the integrity of the system. Approximately one-fourth of



the Company's 3,514 pole miles of local distribution lines must be maintained each year. Although this relates to a normal five-year treatment interval for off-road rights-of-way and a normal four-year cycle for roadside lines, fixed application schedules are avoided by on-site determinations of present site conditions. An assessment of the right-of-way is conducted to document the vegetation conditions (including the height and density of desirable and undesirable species), and other site conditions (such as environmental and visual sensitive areas) to determine if vegetation maintenance should be advanced scheduled or delayed.

#### F. Seasonal and Daily Timing of Treatment

Application crews adhere to strict procedures governing the seasonal and daily timing of selective herbicide applications. They include:

1. Basal techniques are used only when stems are dry and clear to the root collar. These methods are ineffective and consequently not used when the lower stem is either wet or covered with snow or ice.
2. Stumps are not treated during periods of precipitation.
3. Foliar techniques are normally used between June and early September after leaves are fully developed and while the plant is actively growing.
4. Herbicides are not applied when the wind velocity is such that there is a high propensity to drift off target and during measurable precipitation.

### **IX. ALTERNATIVE LAND USE PROVISIONS OR AGREEMENTS MINIMIZING THE NEED FOR HERBICIDES**

This section describes the alternative land use options and agreements which minimize the need for herbicides on the Company's rights-of-way. The Company continuously evaluates alternative vegetation management methods. A brief description of these methods follows.

#### A. Land Use Provisions

A large portion of rights-of-way have no brush requiring control due to land usage. Herbicide treatment is not necessary where lawns, roadways, urban areas, industrial sites, and agricultural areas such as pastures, hayfields, and cornfields do not allow target species to interfere with the conductors or access.

#### B. Agreements

## 1. License agreements

This is an agreement between the Company and another party (an individual, state or local government agency, or corporation), regarding property owned by the Company. A party may enter into an agreement with the Company (through a Company Representative) which allows them to use Company owned land for their purpose (e.g., commercial or agricultural use) in exchange for some agreed to compensation. Certain land uses preclude or reduce the need for brush control. License agreements are negotiated on a case-by-case basis via the Company's Real Estate Department.

## 2. Maintenance agreements

These are agreements between the Company and another party, generally regarding ROW property owned or controlled by the other party for which the Company possesses easement rights. A party may enter into an agreement with the Company, to maintain brush along a ROW, in exchange for some agreed to consideration. Some current and/or historical examples are:

### a. "Tolland" brush agreement (named for the town of Tolland, MA)

A municipality agrees to maintain brush under our lines. In exchange, the Company pays the municipality a dollar amount, calculated as the cost the Company would bear if allowed to maintain brush using herbicides.

### b. "Mower" agreement

A municipality (or group of municipalities) agrees to maintain brush under our lines using a tractor-mounted boom-type mower. In exchange, the Company contributes to the mower lease costs. Additionally, the municipality(ies) are able to mow brush wherever else they wish. The amount contributed toward the mower lease cost is based on the line-mileage maintained by the municipality(ies).

### c. "Parker Road" agreement

A party agrees to mow grass along the ROW to prevent re-invasion of undesirable species. In exchange, the Company agrees to initially establish the grass cover on the ROW. (This is generally accomplished by killing existing brush, grubbing or tilling the soil, and "hydro-seeding" the area with the desired seed mix.)



d. "In-lieu-of" agreement

A party agrees to maintain the brush on (their) ROW property. In exchange, the Company agrees not to use herbicides along the property.

e. "Additional cost" agreement

The Company agrees to maintain the brush along the ROW property without herbicides. The other party agrees to pay the Company the additional cost of this maintenance program, above what it would have cost to maintain the brush using herbicides.

Maintenance agreements may require Company indemnification. Generally there is a formal agreement, letter of intent, or contract drawn up, including specifications. Agreements are negotiated on a case-by-case basis.

Historically, maintenance agreements have had various results, from total failure, to completely successful. The Company will continue to negotiate agreements in good faith, and will continue to pursue innovative agreements.

## **X. REMEDIAL PLAN TO ADDRESS SPILLS AND RELATED ACCIDENTS**

This remedial plan is offered as a guide to proper procedures for addressing pesticide accidents. Since every incident is different, applicators must weigh factors specific to the situation and use their own judgment to decide the appropriate course of action. Because applicators normally carry only small amounts of herbicides, the potential for serious accidents is relatively small.

Federal and state statutes establish emergency response procedures that must be followed by the companies and their contractors in the event of a spill or related accident. Under the Federal Environmental Pesticide Control Act, it is the applicators legal responsibility to clean up pesticide spills resulting from their use and handling of the product. Applicators are liable for damages, subject to penalties, and obligated to clean up and decontaminate areas resulting from pesticide spills.

The Comprehensive Environmental Response, Compensation, and Liability Act 1980 (CERCLA) 42 U.S.C. §9601 et. seq., and the Federal Water Pollution Control Act (CWA) 33 U.S.C. §1251 et. seq. are aimed at eliminating the accidental discharge of oil and hazardous substances into the environment, providing for the cleanup of such substances, and establishing responsibility for costs of cleanup. CERCLA and CWA are implemented by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) 40 CFR §300 et. seq.

Massachusetts General Laws Chapter 21E, the Massachusetts Oil and Hazardous



Material Release Prevention and Response Act, Section 3 authorizes the Massachusetts Department of Environmental Protection (DEP) to act to secure the benefits of the CWA and CERCLA to the Commonwealth by promulgating and enforcing a Massachusetts Contingency Plan to "comport with and complement" the National Contingency Plan. The Massachusetts Contingency Plan, 310 CMR 40.000, establishes standards and procedures for the discovery of discharges, notification of DEP, assessment of the problem, and implementation of appropriate remedial response actions, as set forth in 310 CMR 40.500.

The Farm Chemical Handbook (published by Meister Publishing Co., Willoughby, Ohio), U.S. Department of Transportation "1987 Emergency Response Guidebook" (available from UNZ and Company, Jersey City, New Jersey), herbicide labels, and material safety data sheets provide reference information for the chemicals being used. Applicators should carry equipment for emergency action including sand or other absorptive material, broom, shovel, and heavy duty plastic bags or other leak-proof sealable container.

## A. Emergency Contacts

The following phone numbers may be dialed for emergency assistance:

ChemTrec	(800) 424-9300	Chemical Industry Emergency Response System
Mass. Pesticide Bureau	(617) 727-7712	For Pesticide Spills, Fire, and Related Accidents
Mass. DEP Western Regional Office Materials	(413) 784-1100	For Emergencies Involving Reportable Quantities of Hazardous
American Cyanamid Company  Collect.	(201) 835-3100	For Medical Emergencies Involving Cyanamid Products, Call
DOW	(517) 636-4400	For Emergencies Involving DOW Products; Call Collect
Du Pont	(800) 441-3637	For Medical Emergencies Involving Du Pont Products
Sandoz Crop Protection	(312) 699-1616	For Emergencies Involving Sandoz Products
Monsanto	(314) 694-4000	For Emergencies Involving Collect
Mass. Poison Information Center	(800) 682-9211	For Medical Emergencies Involving Pesticides

## B. Emergency Action

Every attempt will be made to remove herbicide contamination as much as possible. If spills are noticed immediately, most of the herbicide can be removed by shoveling off about one inch of treated soil. If spills are noticed after rain, the top 4 to 6 inches of soil should be removed. Activated charcoal can be applied at the rate of seven pounds per 1,000 square feet of ground surface area and incorporated into the soil to absorb any residual herbicide and make it unavailable for plants.

### 1. Major Spills and Related Accidents

For the purposes of this VMP, major spills involve reportable quantities of hazardous materials as defined by the Department of Environmental Protection (DEP) 310 CMR 40.000. Related accidents include fire, poisoning, and automobile accidents.

- a. Administer proper first aid and call an ambulance and/or Massachusetts Poison Information Center in cases involving injury or poisoning.
- b. Call the police and/or fire department in cases involving automobile accidents or fire.
- c. Avoid breathing fumes of burning herbicides.
- d. Put out all sources of fire. Do not light flares, cigarettes, etc. which can ignite certain herbicides.
- e. If possible, control the spill by stopping the leak or source of spill.
- f. Confine the spread of liquids with a dike composed of soil or other absorptive materials.
- g. Call ChemTrec, Massachusetts Pesticide Bureau, or chemical manufacturer for assistance if unable to handle the spill or the material is unfamiliar.
- h. Notify the DEP if water bodies are contaminated, and for releases or threatened releases of reportable quantities of hazardous materials or oil. Notify the appropriate municipal official as specified in the YOP.
- i. Clean up spill.



- 1) If the spill occurs in a public location, isolate the spill area and deny unauthorized entry until cleanup is complete.
- 2) Absorb spilled liquids with sand, absorptive clay, spill control gel, vermiculite, pet litter, sawdust or other absorptive material. Wear proper protective clothing and equipment.
- 3) Sweep or shovel contaminated absorbent into a leak-proof, sealable container for later disposal.
- 4) Dry herbicides, such as dusts, granulars and pellets can be directly swept or shoveled into leak-proof sealable containers without absorptive materials.
- 5) Neutralize contaminated area with hydrated lime, sodium hypochlorite (bleach), or soapy water. Never mix bleach and ammonia base products or a poisonous gas will result.
- 6) Dispose of contaminated material at an approved location.

## 2. Minor Spills

Minor spills involve less than reportable quantities of hazardous materials.

- a. In case of contact with herbicides, wash with plenty of soap and water. Administer proper first aid and see a doctor if necessary.
- b. Change clothing which has absorbed herbicides.
- c. Clean up spill.
  - 1) If the spill occurs in a public location, isolate the spill area and deny unauthorized entry until cleanup is complete.
  - 2) Absorb spilled liquids with sand, absorptive clay, spill control gel, vermiculite, pet litter, sawdust, or other absorptive material. Wear proper

protective clothing and equipment.

- 3) Sweep or shovel contaminated absorbent into a leak-proof, sealable container for later disposal.
- 4) Dry herbicides, such as dusts, granulars, and pellets can be directly swept or shoveled into leak-proof sealable containers without absorptive materials.
- 5) Neutralize contaminated area with hydrated lime, sodium hypochlorite (bleach), or soapy water. Never mix bleach and ammonia base products or a poisonous gas will result.
- 6) Dispose of contaminated material at an approved location.

## **APPENDIX A**

### **IDENTIFICATION AND QUALIFICATIONS OF INDIVIDUALS DEVELOPING AND SUBMITTING PLAN**

The following individual is responsible for developing and submitting this VMP.  
Address responses to:

David A. Goodson   Telephone No. (860) 280-2254  
Northeast Utilities Service Co.  
P.O. Box 270  
Hartford, Connecticut 06141-0270

Mr. Goodson is presently the System Forester at Northeast Utilities Service Company. He joined the Company in 1980 after receiving his Master of Science Degree from the College of Agriculture and Natural Resources at the University of Connecticut. He received his Bachelor of Science in Forestry from West Virginia University in 1976. He is a member of the International Society of Arboriculture, its New England Chapter and its Utility Arborist Association and is the Past President of the Connecticut Tree Protective Association and formerly the Secretary of the Edison Electric Institute Vegetation Management Task Force. The System Forester is responsible for developing and monitoring Northeast Utilities' policies, procedures and guidelines for all Transmission and Distribution line clearance activities.





## APPENDIX B

### NORTHEAST UTILITIES TRANSMISSION EASEMENT RIGHT-OF-WAY CONDITIONS TO BE MET IN LIEU OF HERBICIDE TREATMENT

- A. The right-of-way shall be clear at all times of live woody vegetation as follows:
1. Outside of accessways no woody vegetation (including trees, and tall maturing shrubs) shall be present taller than 8 feet, and no woody vines shall be growing on structures or guy wires.  
  
The only exception to this may be shrubs which mature no taller than 12 feet.
  2. To permit access, no woody vegetation except low woody shrubs which mature at a height of 2 feet or less (such as Lowbush Blueberry) shall be present taller than 2 feet at the following locations:
    - a. In a 14 feet wide access way between line structures. The location of the access way shall be designated by a representative of the Company's Transmission Line Construction and Maintenance Section.
    - b. Outward for a distance of 10 feet around the periphery of each line structure.
    - c. Outward for a distance of 5 feet around each anchor guy.
- B. All stumps shall be cut as close to the ground as possible, and in no case shall they be cut higher than 3 inches unless used as supports for a fence. If certain trees serve as fence supports, they shall be cut no higher than two (2") inches above the fence. All stumps shall be cut-off at right angles to the stems to avoid leaving sharp points.
- C. If cut-off brush is piled by the landowner within the limits of the cleared portion of the right-of-way, it shall be piled as near to the cleared edges as possible and outside of the outermost electric lines. Each brush pile shall be no higher than 4 feet and no larger on its greatest horizontal dimension than 16 feet, and it shall be separated from any other brush or log pile by at least 6 feet. No brush shall be piled within woods roads, paths, in the access locations described in article A2 above, or at any other locations designated by a representative of the Company's Transmission Line Construction and Maintenance Section.
- D. The land owner shall identify with visible markings the boundaries of his property within the right-of-way.

APPENDIX B (continued)

LETTER FORMAT TO BE SENT TO LANDOWNERS WHO OBJECT TO NU'S  
HERBICIDE USE AND AGREE TO KEEP CLEAR NU'S TRANSMISSION  
RIGHTS-OF-WAY EASEMENTS ON THEIR PROPERTY

Dear \_\_\_\_\_:  
(Land Owner)

This will confirm our conversation on **(date)** concerning the control of trees, brush or vines ("woody vegetation") within the WMECO **(Identity - Kv, from/to)** right-of-way ("right-of-way") on your property in the town of **(town)**. Please sign this document on the line after the word "Agreed" in the margin below and return it in the self-addressed envelope to:

**(Name of WMECO Representative)**  
**(address)**

Proper maintenance of our transmission lines and structures, including keeping the lines free from contact with woody vegetation, is essential to safe and reliable electric service. We have an easement on your land that allows us to control woody vegetation in the right-of-way, in order to keep our lines, structures and access to them clear. The most cost-effective means of vegetation control is through the use of herbicides. Because you do not want us to use herbicides on your land, you have agreed to cut and keep cut the woody vegetation within the right-of-way.

The woody vegetation you have agreed to cut includes all trees and shrubs that are capable of growing tall enough to touch the lines. It also includes woody vegetation that is capable of interfering with access routes between and around line structures. You have agreed to keep such woody vegetation cut and cleared in accordance with the standards set forth in the enclosed Transmission Easement Right-of-Way Conditions to be Met in Lieu of Herbicide Treatment ("Conditions").

If the right-of-way is cut and cleared in a manner satisfactory to WMECO by **(date)** and kept that way thereafter, it will not be necessary for us to use herbicides on the right-of-way. However, if after that time the vegetation is uncontrolled and we determine that the right-of-way does not meet the standards set forth in the "Conditions", we will maintain the right-of-way using any method we deem appropriate, including the use of herbicides, as allowed by our easement and in accordance with applicable federal and state laws and regulations.

**Warning:** The transmission lines located in the right-of-way carry live electric current. As a safety precaution, you must not cut trees, brush or vines located within fifteen feet of the lines. Contact with the lines can cause serious injury or death. If woody vegetation is growing near the lines when this agreement is signed, we will cut it back to a distance of at least fifteen feet from the lines. If there is any question whether trees, brush or vines are too close to the lines for you to cut safely, please contact **(WMECO Representative) at (Phone No.)**.

Very truly yours,



Representative)

By (WMECO

Agreed: \_\_\_\_\_  
(Land Owner)

Enclosure: Transmission Easement Right-of-Way Conditions



APPENDIX B (continued)

**NORTHEAST UTILITIES  
DISTRIBUTION  
EASEMENT RIGHT-OF-WAY CONDITIONS  
TO BE MET IN LIEU OF HERBICIDE TREATMENT**

A. The right-of-way shall be clear at all times of live woody vegetation as follows:

1. Outside of accessways no woody vegetation (including trees, and tall maturing shrubs) shall be present taller than 8 feet, and no woody vines shall be growing on structures or guy wires.

The only exception to this may be shrubs which mature no taller than 12 feet.

2. To permit access, no woody vegetation except low woody shrubs which mature at a height of 2 feet or less (such as Lowbush Blueberry) shall be present taller than 2 feet at the following locations:

- a. In a 14 feet wide access way between line structures. The location of the access way shall be designated by the Company's Regional Distribution Tree Clearance Coordinator.
- b. Outward for a distance of 3 feet around the periphery of each line structure.

B. All stumps shall be cut as close to the ground as possible, and in no case shall they be cut higher than 3 inches unless used as supports for a fence. If certain trees serve as fence supports, they shall be cut no higher than two (2") inches above the fence. All stumps shall be cut-off at right angles to the stems to avoid leaving sharp points.

C. If cut-off brush is piled by the land owner within the limits of the cleared portion of the right-of-way, it shall be piled as near to the cleared edges as possible and outside of the outermost electric lines. Each brush pile shall be no higher than 2 feet and no larger on its greatest horizontal dimension than 16 feet, and it shall be separated from any other brush or log pile by at least 6 feet. No brush shall be piled within woods roads, paths, in the access locations described in article A2 above, on guying anchors, or at any other locations designated by the Company's Regional Distribution Tree Clearance Coordinator.

D. The land owner shall identify with visible markings the boundaries of his property within the right-of-way.



APPENDIX B (continued)

LETTER FORMAT TO BE SENT TO LANDOWNERS WHO OBJECT TO NU'S  
HERBICIDE USE AND AGREE TO KEEP CLEAR NU'S DISTRIBUTION  
RIGHTS-OF-WAY EASEMENTS ON THEIR PROPERTY

Dear \_\_\_\_\_:  
(Land Owner)

This will confirm our conversation on **(date)** concerning the control of trees, brush or vines ("woody vegetation") within the WMECO **(Identity - Kv, from/to)** right-of-way ("right-of-way") on your property in the town of **(town)**. Please sign this document on the line after the word "Agreed" in the margin below and return it in the self-addressed envelope to:

**(Name of WMECO Representative)**  
**(address)**

Proper maintenance of our distribution lines and structures, including keeping the lines free from contact with woody vegetation, is essential to safe and reliable electric service. We have an easement on your land that allows us to control woody vegetation in the right-of-way, in order to keep our lines, structures and access to them clear. The most cost-effective means of vegetation control is through the use of herbicides. Because you do not want us to use herbicides on your land, you have agreed to cut and keep cut the woody vegetation within the right-of-way.

The woody vegetation you have agreed to cut includes all trees and shrubs that are capable of growing tall enough to touch the lines. It also includes woody vegetation that is capable of interfering with access routes between and around line structures. You have agreed to keep such woody vegetation cut and cleared in accordance with the standards set forth in the enclosed Distribution Easement Right-of-Way Conditions to be Met in Lieu of Herbicide Treatment ("Conditions").

If the right-of-way is cut and cleared in a manner satisfactory to WMECO by **(date)** and kept that way thereafter, it will not be necessary for us to use herbicides on the right-of-way. However, if after that time the vegetation is uncontrolled and we determine that the right-of-way does not meet the standards set forth in the "Conditions", we will maintain the right-of-way using any method we deem appropriate, including the use of herbicides, as allowed by our easement and in accordance with applicable federal and state laws and regulations.

**Warning:** The distribution lines located in the right-of-way carry live electric current. As a safety precaution, you must not cut trees, brush or vines located within ten feet of the lines. Contact with the lines can cause serious injury or death. If woody vegetation is growing near the lines when this agreement is signed, we will cut it back to a distance of at least ten feet from the lines. If there is any question whether trees, brush or vines are too close to the lines for you to cut safely, please contact: **(WMECO Representative)** at **(Phone No.)**.

Very truly yours,

By \_\_\_\_\_ (WMECO  
Representative)

Agreed: \_\_\_\_\_  
(Land Owner)

Enclosure: Distribution Easement Right-of-Way Conditions





Date:

## TOWN BRUSH AGREEMENT

Dear:

Western Massachusetts Electric Company (the "Company") hereby grants to the Town of \_\_\_\_\_ (the "Town") and the Town hereby assumes, the rights and obligations of the Company to control the growth of trees, brush, and shrubs under and around the electric utility lines of the Company located within the Town, without the use of herbicides, as contemplated in the Brush Control Survey and Management Plan for \_\_\_\_\_, Massachusetts, attached hereto as Exhibit A, subject to the following terms and conditions:

1. The term of this Agreement shall commence \_\_\_\_\_ and end \_\_\_\_\_, unless sooner terminated as provided in Paragraph 8.
2. Commencing with the calendar year beginning \_\_\_\_\_, the Town shall cut and clear the brush, trees and shrubs under and around all of the Company's distribution lines and poles in the Town (the Work) at least once every five years, the timing of the Work to be in accordance with a five-year schedule (the Schedule) prepared by the Town subject to the approval of the Company. The Schedule shall designate the streets and off-road locations that the Town will cut in each calendar year during the Schedule. The Town shall submit the Schedule to the Company for review and consent not later than \_\_\_\_\_.
3. The Town shall perform the Work in conformity with standards set forth in the guidelines included herewith as Attachment 3 to Exhibit A.
4. The Town shall update the schedule annually to reflect the work completed during the preceding calendar year, and shall provide a copy of the updated schedule to the Company, together with an invoice requesting payment for the completed work, not later than \_\_\_\_\_, and each succeeding \_\_\_\_\_ during the term hereof. Upon receipt of the updated schedule, the Company shall inspect the work completed by the Town during the preceding calendar year, together with brush conditions under and around Company distribution lines in the Town generally. Unless the Company concludes that the work performed by the Town is not in conformity with the guidelines, the Company shall pay the town for the completed work as provided in Paragraph 5. If the Company concludes that the Town's performance of the work is not in conformity with the guidelines, it shall so notify the Town within ten (10) days of inspecting the work, and shall withhold payment until, upon inspection, the conformity with the guidelines.
5. The Company shall pay the Town up to \_\_\_\_\_ per calendar year for its completion of the work in areas designated by the schedule for cutting in that year. This amount is the Company's current estimate of the annual cost of controlling brush in the Town using Company-approved techniques of cutting followed by herbicide stump treatment once every seven years. For calendar years beginning after \_\_\_\_\_, the Company shall increase the annual amount paid to the town by five percent per year as an inflation adjustment. If the Town does not complete all of the work designated by the Schedule for any calendar year, the Company shall pay the Town that fraction of \$\_\_\_\_\_ which corresponds to the ratio of the work schedule for completion to that actually completed, adjusted for inflation.

6. As a condition precedent to the obligations of the Town hereunder, prior to \_\_\_\_\_ the Company shall cut, in accordance with the guidelines, all \_\_\_\_\_ acres of brush described in the Brush Area Summary annexed hereto as Attachment 2 to Exhibit A. The Company shall use no herbicides in connection with this cutting.
7. The Company reserves the right to cut and remove brush as necessary in response to emergency power outages. Costs of such cutting and removal will be deducted from the next annual payment to the Town.
8. In the event that the Company notifies the Town that the work is not being completed in conformity with the Guidelines, the Town shall have six months in which to complete the work in conformity with the Guidelines. If it does not do so, the Company may declare this Agreement at an end and resume brush control in the Town using company-approved techniques, including herbicides.
9. With respect to its actions pursuant to this Agreement, the Town shall comply with all applicable federal, state and local laws, regulations and orders.
10. In no event shall the Company be responsible for any special, indirect or consequential loss, damage or liability incurred by the Town as a result of its exercise of the rights granted by this agreement
11. The Town agrees to indemnify and hold harmless the Company and any and all of its affiliated companies, and its officers, employees, contractors, successors and assigns against any and all losses, damages, suits, claims, costs, judgments, and expenses, including attorney's fees, which any of them may directly or indirectly suffer, sustain, be liable for or subject to, arising out of or connected with the performance of this Agreement.
12. This agreement may not be assigned or transferred without the specific written consent of the Company.
13. The Town is aware of the safety hazards inherent in misuse of any electrical equipment, and as a condition of the Agreement will warn all persons working under and around the Company's lines, through appropriate warning signs or otherwise to avoid direct and indirect contact with the lines and all other electrical facilities. In addition, the Town's performance of the work shall be subject to reasonable conditions imposed by the Company for safety or reliability reasons.
14. Throughout the term of this Agreement the Town shall maintain, and as a condition precedent to exercising the rights granted by this Agreement, the Town shall provide evidence to the Company of at least the following insurance coverage:
  - A. Workers' Compensation Insurance, to policy limits prescribed by the Commonwealth of Massachusetts, and \$500,000 Employers' Liability Coverage
  - B. Comprehensive General Liability Coverage including Operations, Owner's and Contractor's Protective, Completed Operations, Contractual Liability and Broad Form Property Damage Liability providing a combined single limit for Bodily Injury and Property Damage of \$1,000,000 per occurrence.
    1. Evidence of Contractual Liability coverage to insure the Company's obligations under Paragraph 11 of this Agreement must be specifically shown on the Town's Certificate of Insurance.

2. Completed Operations coverage shall be endorsed to show that it shall be in force for at least one year from the date of acceptance of the Work performed by the Town under this Agreement.

C. Comprehensive Automobile Liability Coverage, including all owned, non-owned, and hired vehicles, providing a combined single limit for Bodily Injury and Property Damage of \$1,000,000 per occurrence.

D. All policies, except the Workers' Compensation policy, shall be endorsed naming the Company as additional insureds with respect to any and all third-party bodily injury and/or property damage claims and shall require that thirty (30) days written notice shall be given to the Company prior to any cancellation or material change in any policy. Copies of all policies shall be filed with the Company prior to the effective date of this Agreement.

E. Such coverage as is required herein shall be primary to any other coverage available to the Company, and shall not be deemed to limit the Town's liability as set forth in any other portion of this Agreement.

This agreement is forwarded in duplicate. If the terms and conditions are acceptable, please sign both copies in the space provided and return both copies to me to be executed on behalf of the Company. This Agreement shall not be effective until signed by an officer of the Company and a fully executed copy is delivered to you.

Very truly yours,

Accepted and Agreed to:

By \_\_\_\_\_

Attest \_\_\_\_\_

Date \_\_\_\_\_

By \_\_\_\_\_





Date:

## MOWER AGREEMENT

Dear:

Western Massachusetts Electric Company ("WMECO") and the towns of \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ Massachusetts (the "area towns") have discussed an arrangement by which WMECO will assist the efforts of the area towns to cut brush along the public streets in said towns. WMECO and the area towns recognize that from time to time it is necessary to cut brush along these public roads, to maintain a safe and visually acceptable roadway and to prevent the potential contact of brush with WMECO's electric distribution lines. These WMECO lines are specified in paragraph 1, below. In support of the area towns, WMECO is willing to make an annual contribution for a brush control program in the amount of \$\_\_\_\_\_ on the following terms and conditions:

1. The Town of \_\_\_\_\_ shall lease or otherwise obtain a brush mower (the "equipment") suitable for cutting and trimming brush and other vegetation along the town maintained roads of the area towns. The equipment shall be made available by the Town of \_\_\_\_\_ to each of the area towns at least once a year. Each area town shall cut brush around and beneath all WMECO lines annually. The equipment may also be used to cut brush along portions of town maintained roads where there are no WMECO lines. Maps showing the location of existing WMECO lines in the area towns are available upon request from the WMECO Arborists. Attached as Exhibit 1 are specifications of the miles of pole lines located in each town. WMECO will update this information as necessary. Brush located beneath the WMECO lines shall be cut to WMECO specifications, which is attached as Exhibit 2.
2. The area towns shall make a good faith effort to cut all brush within reach of the equipment per the WMECO specifications (Exhibit 2). If brush is out of reach of the mower (i.e. On top of an outcropping/ledge, too far off road), it need not be (hand) cut by the town.
3. The Town of \_\_\_\_\_ shall notify the WMECO Arborist of the proposed usage schedule of the equipment in the area towns. Each town shall notify the WMECO Arborist (telephone 413-787-9051) when the mower is leaving their town and moving to another.
4. On or about July 1<sup>st</sup>, WMECO will make an annual contribution (gift) of \$\_\_\_\_\_ to the Town of \_\_\_\_\_ in support of this brush control program for a period of four (4) years. WMECO's agreement to make this annual contribution is conditioned upon the performance of each of the area towns in accordance with the terms and conditions of this letter. WMECO may, at its option, cancel this agreement upon sixty (60) days written notice to the Town of \_\_\_\_\_ and cease annual contributions if any one or more of the area towns fail(s) to cut or trim brush beneath the WMECO lines as provided herein and fail(s) to cure said non-performance within said sixty (60) day period. In the case of non-performance, the area towns agree that any portion of WMECO's \$\_\_\_\_\_ contribution for the current year which can be recouped from the leasing company will be returned to WMECO.

In addition, WMECO shall also have the right to cancel this agreement for reasons other than non-performance, as long as WMECO provides 60 days written notice to the said area towns and reimburses the Town of \_\_\_\_\_ for any charges incurred to terminate the equipment lease.

5. Except as provided in paragraph 4, above, WMECO shall not be responsible for any costs associated with the equipment, including but not limited to lease payments, maintenance costs and/or insurance. In addition, the equipment shall be used at the sole risk of the area towns, and WMECO shall not incur any liability in connection with the use thereof.
6. Additional municipalities may be added to this agreement at the option of the parties as long as the addition is agreed to in writing by all municipalities participating in the program and WMECO, and provided said additional municipalities agree to and are bound by the terms herein.

Please indicate your acceptance of these terms and conditions, and the acceptance by the other area towns, by executing a copy of this letter and returning it to the undersigned. This agreement will become effective upon WMECO's receipt of this letter executed by all the parties listed below, but will not begin before

\_\_\_\_\_.



WESTERN MASSACHUSETTS ELECTRIC COMPANY

by: \_\_\_\_\_  
Its Director of Energy Delivery WMECO

Agreed and accepted by:

Town of \_\_\_\_\_

By \_\_\_\_\_  
Its

Date: \_\_\_\_\_



Exhibit 1

Miles of Pole Line by Town

<u>Town</u>	<u>Pole line miles, roadside</u>
_____	75.1
_____	44.1
_____	31.8
_____	63.7
_____	37.9
_____	45.4





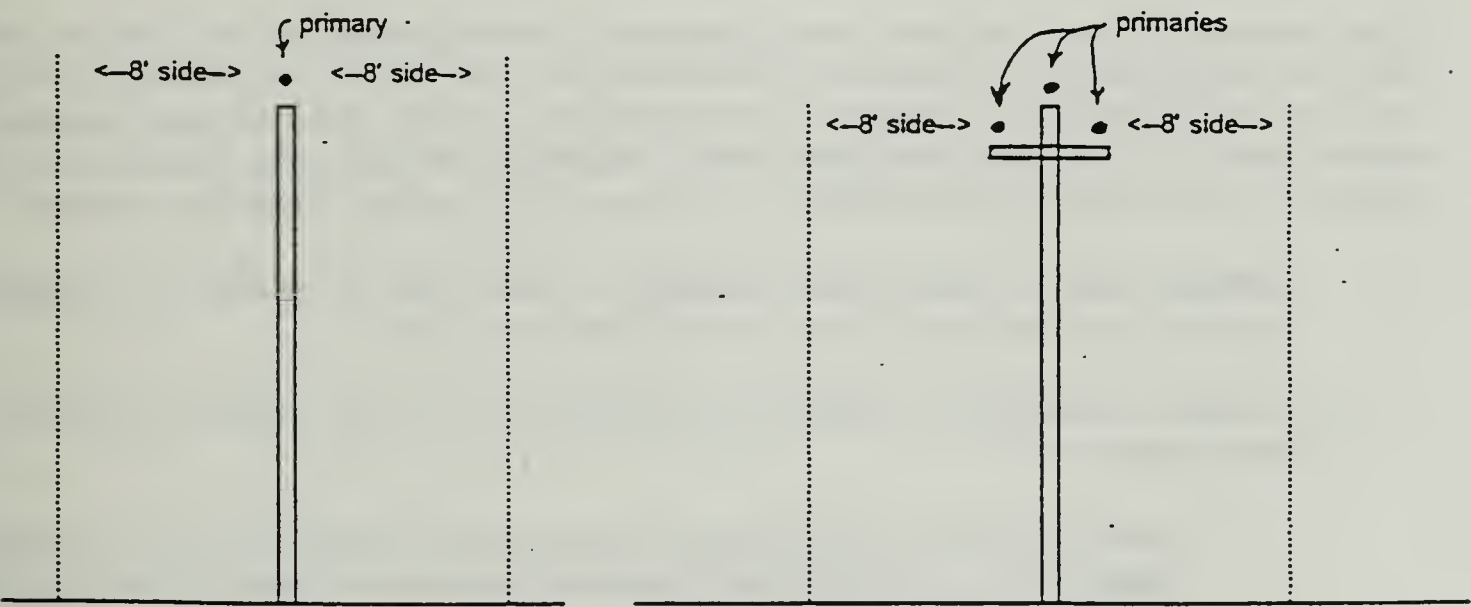
**Exhibit 2**

**Brush Specifications**

The width of the brush removal area shall be 8 feet each side of the outermost conductor.

All tree stems less than or equal to 4 inches DBH (diameter breast height) shall be considered brush. Brush shall not be trimmed, but rather cut at or near ground level.

**Horizontal brush clearance zones for single and three phase primary conductors:**



Date

**ALTERNATIVE RIGHT-OF-WAY VEGETATION MANAGEMENT AGREEMENT  
USING LOW GROWING PLANT COMMUNITIES**

Dear:

This will confirm our conversation on \_\_\_\_\_ concerning the control of trees, brush or vines ("woody vegetation") within the \_\_\_\_\_ KV line from \_\_\_\_\_ right-of-way ("ROW") on your property near \_\_\_\_\_, in the town of \_\_\_\_\_. If this letter correctly states our agreement on this matter, please sign it on the line after the word "Agreed" in the margin below and return it in the self-addressed envelope to:

Name  
WMECO  
PO Box 2010  
West Springfield, MA 01090-2010

Proper maintenance of our distribution lines and structures, including keeping the lines free from contact with woody vegetation, is essential to safe and reliable electric service. We have an easement on your land that allows us to control woody vegetation in the right-of-way, in order to keep our lines, structures and access to them clear. The most cost-effective means of vegetation control is through the use of herbicides. Because you do not want us to use herbicides on your land, we have reached the following agreement:

- A. WMECO agrees to perform work necessary to remove woody vegetation and establish a herbaceous plant community on the portion of ROW on your land.
- B. You agree to, thereafter, keep this portion of ROW free from woody vegetation according to the following standards:
  - 1. Woody vegetation includes all trees and shrubs that are capable of growing tall enough to touch the lines. It also includes all trees and shrubs that are capable of interfering with access along, between, and around line structures (including, but not limited to, sumac).
  - 2. Low growing shrubs that mature at a height of 2 feet or less (e.g. Lowbush Blueberry) may remain as well as grasses and forbs.
  - 3. At any time, no stem of a woody vegetation species will be allowed to exceed 6 feet in height on this portion of the ROW.

If, after WMECO performs the work described in "A" above, the ROW is maintained by you in accordance with "B" above, it will not be necessary for us to use herbicides in the ROW. However, if after that time the vegetation is uncontrolled and does not meet the standards set forth in "B", we will maintain the ROW using any method we deem appropriate, including the use of herbicides, as allowed by our easement and in accordance with applicable federal and state laws and regulations.

**Warning:** The distribution lines located in the ROW carry live electric current. As a safety precaution, you must not cut trees, brush or vines that are in close proximity to the overhead conductors. Contact with



the lines can cause serious injury or death. If woody vegetation is growing near the lines, the NU Representative will make a determination on whether or not NU will cut, top or trim back the vegetation away from the conductors to a safe distance. After that, the property owner or his contractor will be required to perform maintenance.

Very truly yours,

Agreed: \_\_\_\_\_  
(WMECO)

(date)

Agreed: \_\_\_\_\_  
(Land Owner)

(date)

CC:



## **APPENDIX C**

### **333 CM 11.00: RIGHTS-OF-WAY MANAGEMENT**





## Section

- 11.01: Purpose
- 11.02: Definitions
- 11.03: General Provisions
- 11.04: Sensitive Area Restrictions
- 11.05: Vegetation Management Plan (VMP)
- 11.06: Yearly Operational Plan (YOP)
- 11.07: Public Notification
- 11.08: Notice of Modification and Revocation
- 11.09: Right-of-Appeal
- 11.10: Penalties

11.01: Purpose

The purpose of this chapter is to promote the implementation of Integrated Pest Management (IPM) Techniques and to establish those standards, requirements and procedures necessary to minimize the risk of unreasonable adverse effects on human health and the environment associated with the use of herbicides to maintain rights-of-way and to establish a statewide and uniform regulatory process. These regulations establish procedures which guarantee ample opportunity for public and municipal agency review and input on right-of-way maintenance plans.

11.02: Definitions

For the purpose of 333 CMR 11.00, the following definitions shall apply.

Agricultural Area, shall refer to, but not be limited to, actively cultivated gardens, greenhouses, orchards, fields, pastures, and other areas where herbicides might impact adversely on the vegetation under cultivation or agricultural management.

Applicant, shall refer to any person representing federal, state or local governments or agencies, utilities, railroads, pipelines, that intend to maintain a right-of-way by the application of herbicide.

Ballast, shall refer to the coarse gravel or crushed rock onto which the ties, tracks and any switching, signaling and communication devices of a railroad are laid.

Broadcast, shall refer to any non-selective herbicide application technique which results in application to all vegetation within a target area.

Department, shall refer to the Department of Food and Agriculture.

Foliar Treatment, shall refer to any technique which applies herbicide to leaves of the target vegetation.

Inhabited Area, shall refer to, but not be limited to residences, schools, hospitals, parks and recreational facilities or other areas in which humans generally live, work or gather.

Low Pressure, shall refer to pressure under 60 psi.

Maps, shall refer to maps which are of such accuracy and scale, as determined by the Department, to provide sufficient detail so that sensitive areas can be delineated, or which show bench marks or other permanent structures located on the right-of-way which allow the delineation of sensitive areas.

Person, shall refer to, but is not limited to, an individual, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or its political subdivision, administrative agencies, public or quasi-public corporation or body, or any other legal entity or its legal representatives, agent or assignee, or a group of persons.

Person aggrieved, shall refer to any person who, because of an act or failure to act by the Department may suffer an injury in fact which is different either in kind or magnitude from that suffered by the general public and which is within the scope of the interests identified in these Regulations. Such person must specify in writing sufficient facts to allow the Department to determine whether or not the person is in fact aggrieved.

Primary Recharge Area, that land area delineated by Zone II as defined in 310 CMR 24.06 or in such cases as when the primary recharge area has not been designated it shall be, in the interim, be defined as a one half mile radius from the public drinking water supply well unless otherwise determined by the Department of Environmental Protection.

Right(s)-of-Way (ROW), for the purpose of this regulation shall refer to any roadway, or thoroughfare on which public passage is made and any corridor of land over which facilities such as railroads, powerlines, pipelines, conduits, channels or communication lines are located.

Selective Application, shall refer to the application of herbicide, in such a manner that the delivery to the target vegetation is optimized and delivery to non-target vegetation and the environment is minimized.

Sensitive Areas, shall refer to any areas, within rights-of-way, including but not limited to the following, in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects:

- (a) within the primary recharge area of a public drinking water supply well;
- (b) within 400 feet of any surface water used as a public water supply;
- (c) within 100 feet of any identified private drinking water supply well;
- (d) within 100 feet of any standing or flowing water;
- (e) within 100 feet of any wetland;
- (f) within 100 feet of any agricultural or inhabited area.

Stem Treatment, shall refer to any technique including stump, basal, stem, injection, banding, frill, girdle and any other treatment which delivers herbicide at low pressure to the stump, base or stem of the target vegetation.

Target Vegetation, shall refer to any plant species which has the potential to interfere with the operation of the rights-of-way.

Touch-up Application, shall refer to limited application of herbicides following an initial treatment, which is necessary to achieve the desired vegetation control.

Vegetation Management Plan (VMP), shall refer to a long term management plan for the applicant's right-of-way system which describes the intended program for vegetation control over a five year period.

VMP Advisory Panel, shall refer to the Vegetation Management Plan Advisory Panel as set forth in 333 CMR 11.05(4).

Yearly Operational Plan (YOP), shall refer to the yearly operational plan which describes the detailed vegetation management operation for the calendar year consistent with the terms of the long term Vegetation Management Plan.

Water Supply, shall refer to any raw or finished water source that is presently used, reserved for future use, or under investigation for future use by a public water system as defined in 310 CMR 22.02, or used as a source of private drinking water by one or more persons. This shall include all land and waters used as, or tributary to, a public water system except those exempted under 310 CMR 22.20.

Wetlands, with the exception of land subject to flooding shall refer to areas subject to protection under M.G.L. c. 131, s. 40 which include the following areas as defined in 310 CMR 10.02(1)(a) - (c):



11.02: continued

- |   |           |             |
|---|-----------|-------------|
| (a) Any bank,                                       |           | the ocean   |
| any freshwater wetland,                             |           | any estuary |
| any coastal wetland,                                |           | any creek   |
| any beach,  | bordering | any river   |
| any dune,   | on        | any stream  |
| any flat,   |           | any pond    |
| any marsh,  |           | or any lake |
| or any swamp  |           |             |
| (b) Land under any of the water bodies listed above |           |             |
| (c) Land subject to tidal action                    |           |             |

11.03: General Provisions

- (1) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way unless appropriately certified by the Department or unless appropriately licensed by the Department and working under the on-site supervision of an appropriately certified applicator.
- (2) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way except in accordance with a Vegetation Management Plan (VMP) and a Yearly Operational Plan (YOP) as approved by the Department. Such documents shall be available at the work site at all times during herbicide applications and be made available to the Department and municipal officials including the Conservation Commission and Board of Health upon reasonable request.
- (3) No person shall handle, mix or load an herbicide concentrate on a right-of-way within 100 ft. of a sensitive area.
- (4) The perimeter of any sensitive areas which are not readily identifiable on the ROW shall be appropriately marked prior to any herbicide applications. The precise method used in marking these areas shall be identified in the VMP.
- (5) No foliar application of herbicides shall be used to control vegetation greater than 12 ft. in height except for side trimming.
- (6) No herbicide shall be applied when the wind velocity is such that there is a high propensity to drift off target and/or during measurable precipitation.
- (7) No person shall apply herbicides by aircraft for the purpose of clearing or maintaining a right-of-way.
- (8) No touch-up applications shall be carried out except under the following conditions:
  - (a) Touch-up applications must occur within 12 months of the date of approval of the YOP.
  - (b) The Department, the Conservation Commission, the Board of Health, and Chief elected official of the municipality shall be notified by certified mail at least 21 days prior to any application.
  - (c) No more than 10% of the initially identified target vegetation on the applicant's right-of-way in any municipality may be treated and the total amount of herbicide applied in any one year shall not exceed the limits specified by the label or Yearly Operational Plan.
  - (d) The Department may impose such additional restrictions or conditions on the use of herbicides as it deems necessary to protect public health and the environment.
- (9) The Department will maintain mailing lists of individuals and groups desiring to obtain notices on various aspects of the Program.

11.04: Sensitive Area Restrictions

- (1) General
  - (a) No more than the minimum labelled rate of the pesticide product for the appropriate site, pest, and application method shall be applied.



(b) Herbicides applied in sensitive areas shall be applied selectively by low pressure foliar techniques or stem application.

(c) No person shall apply herbicides for the purpose of clearing or maintaining a right-of-way in such a manner that results in drift to any area within 10 feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified in accordance with 333 CMR 11.04(2)(c)(3).

(d) The Department, in cooperation with the Department of Environmental Protection, and subject to a Memorandum of Understanding will evaluate herbicides currently registered for use on rights-of-way and will distribute a list of herbicides recommended for use in sensitive areas and guidelines for their use. The Memorandum of Understanding will set forth a procedure for this evaluation based on all available data relative to environmental fate and toxicity. Such list, guidelines and procedures will be subject to review and comment by the Department of Public Health provided that such comments are provided to the Department within a reasonable time. The Department, on August 15 of the calendar year, will make available the list and guidelines to applicants and to the VMP Advisory Committee. Applicants proposing to use an herbicide which has been registered for use on rights-of-way but has not yet been evaluated pursuant to the provisions of the Memorandum of Understanding may request that such herbicides be evaluated pursuant to said provisions. For an herbicide which has been evaluated pursuant to the provisions of the Memorandum of Understanding, applicants proposing to use such herbicide in a manner inconsistent with the terms and conditions of use imposed in the guidelines may request a modification or waiver of such terms or conditions. A request for such modification or waiver shall provide a detailed rationale for use, including all relevant data including but not limited to environmental fate, efficacy and human health effects of the proposed herbicide. Such herbicides and/or uses shall be subject to the evaluation standards adopted by the Departments of Food and Agriculture and Environmental Protection in the Memorandum of Understanding.

#### Commentary

Applicants subject to the provisions of the Wetlands Protection Act, who wish to apply pesticides registered for use in Massachusetts to rights-of-way, may choose to apply herbicides determined to be suitable for use in sensitive areas in accordance with the provisions of the Memorandum of Understanding mentioned above or, alternatively, applicants may proceed pursuant to the provisions of 310 CMR 10.00 as authorized by M.G.L. c. 131, s. 40.

(e) The Department may impose such additional restrictions or conditions on the use of herbicides within or adjacent to sensitive areas as it determines necessary to protect human health or the environment. Such changes may be proposed by a municipal agency or individual during the public comment period.

#### (2) Water Supplies

##### (a) Public Ground Water Supplies

1. No herbicides shall be applied within 400 feet of any public ground water supply well.
2. No herbicides shall be applied within the primary recharge area of a public ground water supply well except under the following conditions:
  - a. A minimum of 24 months shall elapse between applications; and
  - b. Herbicides shall be applied selectively by stem application or low pressure foliar techniques.

##### (b) Public Surface Water Supplies

1. No herbicide shall be applied within 100 feet of any surface water used as a public water supply.
2. No herbicide shall be applied between 100 feet and 400 feet of any surface water used as a public water supply except under the following conditions:

- a. A minimum of 24 months shall elapse between applications; and
  - b. Herbicides shall be applied selectively by low pressure foliar techniques or stem application.
- (c) Private Drinking Water Supplies
- 1. No herbicide shall be applied on or within 50 feet of any private drinking water supply identified in accordance with 333 CMR 11.04(2)(c)(3).
  - 2. No herbicide shall be applied between 50 feet and 100 feet of any private drinking water supply identified in accordance with 333 CMR 11.04(2)(c)(3) except under the following conditions:
    - a. A minimum of 24 months shall elapse between applications; and
    - b. Herbicides shall be applied selectively by low pressure foliar techniques or stem application.
  - 3. It shall be the responsibility of the applicant to adhere to the sensitive area restrictions around identified private wells. The applicant shall consult with the Department to identify private wells that are located within 100 feet of the rights-of-way. The Department shall request the location of private wells along the right-of-way from the Department of Environmental Management and local Boards of Health. Wells identified to be within 100 feet shall be kept on file by the applicant for delineation on the maps in the YOP and be listed in the YOP. The VMP must include the method of locating identified private wells in the field prior to the application of herbicides.

(3) Surface Waters

- (a) No herbicide shall be applied on or within ten feet of any standing or flowing surface water which is not a public water supply. No herbicides shall be applied between ten feet and 100 feet of any standing or flowing surface water which is not a public water supply except under the following conditions:
  - 1. A minimum of 12 months shall elapse between application; and
  - 2. Herbicides shall be applied selectively by low pressure foliar techniques or stem application.

(4) Wetlands

- (a) No herbicide shall be applied on or within ten feet of a wetland.
- (b) No herbicide shall be applied between ten feet and 100 feet of a wetland except under the following conditions:
  - 1. A minimum of 12 months shall elapse between applications; and
  - 2. Herbicides shall be applied selectively by low pressure foliar techniques or stem application.
- (c) Notwithstanding 333 CMR 11.04(4)(a), public utilities providing electric, gas, water, telephone, telegraph and other telecommunication services may apply herbicides on or within ten feet of a wetland in accordance with the following conditions:
  - 1. Submission of a study, the design of which is subject to prior approval by the Departments of Food and Agriculture and Environmental Protection, evaluating impacts of proposed vegetation management programs on wetlands; and
  - 2. A finding by the Department, after consultation with the Advisory Committee, that the proposed vegetation management program will result in less impacts to the wetland than mechanical control.
  - 3. Notwithstanding the above, no herbicides shall be applied on or within ten feet of any standing or flowing water in a wetland.

(5) Inhabited and Agricultural Areas

- (a) No high pressure foliar herbicide applications shall be carried out within 100 feet of any inhabited area or any agricultural area during the growing season.
- (b) No foliar herbicide shall be applied within 100 feet of any inhabited area or any agricultural area during the growing season except under the following conditions:
  - 1. A minimum of 12 months shall elapse between applications; and
  - 2. Herbicides shall be applied selectively by low pressure foliar techniques or stem application.



(1) General

(a) Unless otherwise specified by the Department, all VMPs should be submitted by the applicant no later than September 1 prior to the calendar year of the proposed first year of maintenance. All approved VMPs shall take effect on January 1 unless otherwise specified by the Department, and shall be effective for a five year period unless otherwise modified, or revoked by the Department.

(b) The VMP shall be presented on forms and/or format approved by the Department.

(2) Requirements. The VMP shall include but not be limited to the following:

(a) General statement of goals and objectives of the VMP.

(b) Identification of target vegetation.

(c) Intended methods of vegetation management and rationale for use, including vegetation control techniques, equipment proposed for use and timing of applications and alternative control procedures.

(d) Justification of herbicide applications proposed.

(e) Methods, references and sources for identifying sensitive areas and control strategies proposed for sensitive areas.

(f) Operational guidelines for applicators relative to herbicide use.

(g) Identification and qualifications of individuals developing and submitting a plan.

(h) A description of Integrated Pest Management Programs or other techniques/programs to minimize the amount and frequency of herbicide application.

(i) Description of alternative land use provisions or agreements that may be established with individuals, state, federal or municipal agencies that would minimize the need for herbicide, including the rationale for accepting or denying any reasonable request made by any individual.

(j) Remedial plan to address spills and related accidents.

(3) Public Notice, Review and Comment

(a) Upon receipt of the proposed VMP, the Department shall schedule and hold appropriate regional public hearings affording all interested parties the opportunity to comment on the proposed plan.

(b) At least 21 days prior to the public hearings, the Department shall publish notice of the hearings in the Environmental Monitor and regionally located newspapers, and send notice to municipalities covered by the plan and to the appropriate mailing list. The notice will include locations where copies of the VMP can be reviewed.

(c) The public shall have no less than 45 days, starting from publication of the Environmental Monitor notice, to comment upon proposed VMPs, unless the Department extends the comment period for good cause.

(d) At least 21 days prior to the end of the public comment period, the applicant shall send a copy of the proposed VMP to the chief elected official, the Board of Health and the Conservation Commission in affected communities upon their request.

(4) VMP Advisory Panel

(a) There shall be a VMP Advisory Panel charged with the responsibility of reviewing Vegetation Management Plans and the accompanying public comments. The Panel shall recommend approval, denial or modification to the Department.

(b) The Panel shall consist of the Commissioner(s) or designees of the following Departments:

Department of Food and Agriculture, non-voting

Department of Environmental Protection

Department of Public Health

Department of Public Works and ...

Division of Fisheries and Wildlife, Natural Heritage Program

a representative appointed by the Commissioner of

DFA from each of the following groups:

Massachusetts Association of Conservation

Commissions;

Massachusetts Association of Health Boards;  
University of Massachusetts/Extension Service;  
railroads;  
utilities;  
applicator; and an  
environmentalist

A member shall be appointed for a term of one, two or three years. Appointed members shall serve at the discretion of the Commissioner. No member shall serve more than six consecutive years. Appointed panel members shall serve without compensation and shall not be reimbursed for any expenses incurred by them in the performance of their duties. The Commissioner of the Department or designee shall serve as an ex officio non-voting member to the VMP Advisory Panel.

(c) The Department of Food and Agriculture's Representative shall chair the VMP Advisory Panel. This chairperson shall coordinate efforts of the Department and the Panel to process the VMPs.

(d) The VMP Advisory Panel shall conduct business in accordance with the time, place and procedures agreed upon.

(e) The VMP Advisory Panel shall review all complete VMPs including all written and public hearing comments. The Advisory Panel may, if necessary, request from the applicant additional information. Within 30 days of the end of the comment and review period, unless extended for good cause, the VMP Advisory Panel shall recommend to the Department in writing approval, denial or modification of each VMP.

(5) Disposition of VMP

(a) 30 copies of the proposed VMP shall be submitted to the Department. The Department shall distribute copies of the proposed VMP to each member of the Advisory Panel.

(b) Within 30 days of the end of the public comment period unless extended for good cause, the VMP Advisory Panel shall review the VMPs and recommend in writing to the Department approval, denial or modification of each VMP; if necessary, the Panel may request from the applicant additional information.

(c) Within 21 days of the end of the VMP Advisory Panel review period, unless extended by the Department for good cause, the Department will notify the applicant and the Advisory Panel in writing one of the following:

1. request for additional information or modification; or
2. denial of VMP; or
3. approval of VMP.

(d) The VMP may be modified, withdrawn or amended by the applicant through a written request sent by certified mail to the Department.

(e) Resubmission of a denied VMP, updating of a VMP, or a significant amendment to an approved VMP shall be processed according to 333 CMR 11.05.

(f) The applicant must send a copy of the approved VMP to the chief elected official, Board of Health, and Conservation Commission in each municipality covered by the plan.

(6) Time for Action. Non action on a Vegetation Management Plan within time specified herein does not constitute approval of the submitted plan. In the event that the Department fails to notify the applicant of a decision within the time specified above and upon written request from the applicant, the Commissioner must issue a finding within ten days of receipt stating the reason for the delay and providing an estimated completion date.

11.06: Yearly Operational Plan (YOP)

(1) General

(a) The applicant is responsible for the accuracy and completeness of all information submitted with the YOP. The YOP shall be consistent with the objectives of the VMP and shall describe the intended operational program for that calendar year.

(b) The YOP shall be presented on forms and/or format approved by the Department.



- (2) Requirements. The YOP shall include but not be limited to the following:
  - (a) Maps locating the ROW and Sensitive areas not readily identifiable in the field.
  - (b) Herbicides proposed including application rates, carriers, adjuvants.
  - (c) Herbicide application techniques and alternative control procedures proposed.
  - (d) The company which will perform any herbicide treatment.
  - (e) Identification of target vegetation.
  - (f) Individual representing applicant supervising YOP.
  - (g) Flagging methods to designate sensitive areas on the ROW.
  - (h) Herbicide Fact Sheets as approved by the Department.
  - (i) Procedures and locations for handling, mixing and loading of herbicide concentrates.
- (3) Public Notice, Review and Comment
  - (a) Upon submittal of the YOP for approval, the Department will publish a notice in the Environmental Monitor. Said notice shall be provided by the applicant and shall include the information on the municipalities through which the rights-of-way pass, a brief description of the intended program, and the procedure for public review and comment. The Department will distribute copies of the Environmental Monitor notice to the appropriate mailing list and the applicant.
  - (b) The applicant shall provide by certified mail under separate cover to the Board of Health, Conservation Commission and chief elected municipal official a copy of the proposed YOP and the Environmental Monitor notice for the city or town in which the herbicide treatment is proposed. The applicant shall maintain copies of the packet sent to municipalities and certified mail receipts as part of the recordkeeping requirements, 333 CMR 10.15.
  - (c) The Department shall allow a 45 day comment period on proposed YOPs, unless extended for good cause, commencing with the publication of the notice in the Environmental Monitor and receipt of the proposed YOP and Environmental Monitor notice by each municipality.
  - (d) The Department may approve, deny or modify YOPs after the 45 day comment period has expired.
- (4) Disposition of YOP
  - (a) The YOP shall be submitted by the applicant to the Department at least 90 days prior to the proposed commencement of application to allow completion of the comment period and review.
  - (b) The Department shall review the YOP to ensure that the YOP is consistent with the approved VMP. Any inconsistencies or deficiencies will be noted by the Department and returned to the applicant.
  - (c) Where practical, the Department shall approve or deny the YOP within 90 days of receipt. The Department will provide notice of the decision to the applicant, municipal agencies and commentators in writing.
  - (d) The approved YOP in conjunction with the VMP shall govern the application of herbicide for a period not to exceed 12 months in accordance with other laws and regulations of the State and Federal governments and impose such conditions as necessary to minimize the risk of adverse effects on human health and the environment.
- (5) Time for Action. Non action on a Yearly Operational Plan within the time specified herein does not constitute constructive approval of the submitted plan. In the event that the Department fails to notify the applicant of a decision within the time specified above and upon a written request from the applicant the Commissioner must issue a finding within 10 days of receipt stating the reason for the delay and providing an estimated completion date.

#### 11.07: Public Notification

The applicant shall provide by certified mail under separate cover, at least 21 days in advance of the application of herbicide to the right-of-way, a notice to the Department and to the Mayor, City Manager or Chairman of the Board of Selectman, the Board of Health, and the Conservation Commission in the

municipality where the right-of-way lies. The notice shall include but not be limited to the approximate date on which such spraying shall occur, provided however, that said spraying shall not conclude more than ten days after said approximate date; a copy of a DFA approved Herbicide Fact Sheet on the active ingredient(s) of the herbicide(s) used; the name and address of contractor who will make the application or the name of the certified employee who will make the application.

This notice may run concurrently with the public notice and comment period in 333 CMR 11.06(3) provided the application is made after the close of the public notice and comment period and all modifications to the YOP are made before the application takes place and approval is granted by the Department.

#### 11.08: Notice of Modification and Revocation

(1) The Department may suspend approval of any VMP or YOP, by written notice to the applicant and applicator, halting the application of herbicide to that right-of-way of the above mentioned YOP. After 21 days if the applicant does not request a hearing, the Department may revoke or modify the VMP and YOP, if it finds:

- (a) that the terms, conditions of restrictions thereof, are being violated or are inadequate to avoid unreasonable adverse effects on the environment or on human health; or
- (b) that the applicant has made a false or misleading statement in the VMP or YOP; or
- (c) that the applicant has violated any provision of the Massachusetts Pesticide Control Act or FIFRA, or any regulations, standards, orders or license issued under either.

(2) Upon notice of revocation or modification, the applicant may modify the YOP by written request to the Department. Applications to modify the YOP shall be submitted in the manner set forth in 333 CMR 11.06 and disposed of in the manner set forth in 333 CMR 11.06. The Department may waive all or part of the requirement if it determines that the proposed changes do not significantly change the terms of the approved YOP.

#### 11.09: Rights of Appeal

Any person aggrieved by the decision of the Department to approve, deny, modify or revoke a Vegetation Management Plan or a Yearly Operational Plan may request an adjudicatory hearing. The request for a hearing must be sent to the Department by Certified mail or hand delivered within 21 days after the date of decision or notice by the Department. At the same time the request for a hearing must be sent by Certified mail or hand delivered to the applicant and the Pesticide Board. The request should state clearly and concisely the facts of the proceeding, the reasons the decision is alleged to be inconsistent with 333 CMR 11.00 and the relief sought by the adjudicatory hearing. The adjudicatory hearing before the Pesticide Board shall be conducted as set forth in M.G.L. c. 30A and M.G.L. c. 132B, s. 13.

#### 11.10: Penalties

Any person who violates any provision of 333 CMR 11.00 shall be subject to the criminal and civil penalties set forth in M.G.L. c. 132B, s. 14.

#### REGULATORY AUTHORITY

333 CMR 11.00: M.G.L. c. 132B.





**APPENDIX D**

Recommended herbicides for use in sensitive areas.





COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF FOOD AND AGRICULTURE  
100 CAMBRIDGE ST., BOSTON, MA 02202 617-727-3000 FAX 727-7235

MARGEO PAUL CELLUCCI  
Governor

TRUDY COXE  
Secretary

JONATHAN L. HEALY  
Commissioner

To: All Interested Parties

From: The Department of Environmental Protection  
The Department of Food and Agriculture

Date: September 1998

Subject: List of "Approved" herbicides for use in Sensitive Areas on Rights-of-Ways

=====

In accordance with the provisions of 333 CMR 11.04 (1)(d), the Department of Food and Agriculture (DFA) in cooperation with the Department of Environmental Protection (DEP) and subject to an agreement signed between the two agencies. A scientific review of registered herbicides for use within sensitive areas as defined in 333 CMR 11.02.

The following is a listing of the "recommended herbicides" including particular guidelines for usage, that may be applied of rights-of-Ways in sensitive areas as specified in 333 CMR 11.04 and in accordance with other provisions of the Rights-of-Way Management Regulations.

Persons requesting additional information or copies of the review summary Fact Sheets of the "recommended herbicides" should call 617-727-3000 x135 or write to:

Dennis Guastalli  
Investigations Massachusetts Pesticide Bureau  
Room 2103  
100 Cambridge Street - 21st. Floor  
Boston, MA. 02202



The following is the "LIST" of recommended herbicides for use in sensitive areas within Rights-of-Way pursuant to 333 CMR 11.04(1)(d).

Trade Name	EPA Reg. No.	Active Ingredient	Use Restrictions
Accord	524-326	Glyphosate	None
Rodeo	524-343	Glyphosate	None
Roundup	524-308	Glyphosate	None
Roundup PRO	524-475	Glyphosate	None
Arsenal	241-273	Imazapyr	3 Pints/acre Every 3 <sup>rd</sup> Year or 2 Pints Every Other Year
Chopper RTU	241-330	Imazapyr	None
Arsenal NS	241-346	Imazapyr	3 Pints/acre Every 3 <sup>rd</sup> Year or 2 Pints Every Other Year
Krenite	352-376	Fosamine Ammonium	None
Krenite S	352-395	Fosamine Ammonium	None
Krenite UT	352-395	Fosamine Ammonium	None
Escort	352-439	Metsulfuron Methyl	None
Banvel CST	55947-32	Dicamba	Sponge Application to Cut Stump
Garlon 4	464-554	(Butoxy ethyl ester Triclopyr)	0.5 Pints/acre within 10 feet; 3.0 pints/acre within 50 feet
Oust	352-401	Sulfometuron methyl	None

Applications of herbicides for the purpose of railroad Rights-of-Way maintenance which are not recommended above are subject to the provisions of MGL c.131 Section 40, and MGL c.21A Section 2, and regulations promulgated thereunder.

The following is a list of herbicides which applicants have requested for evaluation for use on Rights-of-Way. These herbicides have been evaluated and are **NOT RECOMMENDED** for use in sensitive areas within Rights-of-Way pursuant to 333 CMR 11.00 for the specified reason(s).

Trade Name	EPA Reg. No.	Active Ingredient	Reason
Weedar 64A	264-143	2,4-D (Diethanolamine salt)	Tank mix with not recommended herbicide
Formula 40	464-1-39511	2,4-D (Triisopropanol amine salt)	Tank mix with not recommended herbicide
Access	464-576	Picloram / Triclopyr (Butoxyethyl ester)	Aquatic toxicity of butoxyethyl ester of triclopyr and mobility of picloram
Garlon 3A	464-546	Triclopyr (Triethanol amine salt)	Triclopyr may be classified as a class C carcinogen, and is both moderately mobile and persistent
Tordon K	464-421	Picloram	Mobility of picloram as a broadcast spray
Weedone 170	264-222	2,4-D (Butoxyethanol ester) 2,4-DP (Butoxyethanol ester)	Aquatic toxicity of butoxyethanol ester of 2,4-D

*Carol Rowan West*

Carol Rowan-West, Director  
Office of Research and Standards  
Department of Environmental  
Protection

*Brad Mitchell*

Brad Mitchell, Chief  
Pesticide Bureau  
Department of Food and  
Agriculture

*April 30, 1997*

Date

*4/19/97*

Date

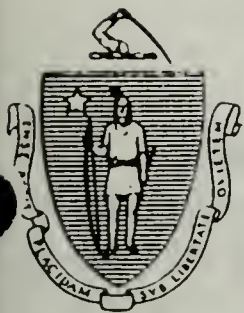




## **APPENDIX E**

Decision concerning the wetland impact study.





COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF FOOD AND AGRICULTURE  
100 CAMBRIDGE ST., BOSTON, MA 02202 617-727-3000 FAX 727-7235

WILLIAM F. WELD  
Governor

MARGARET PAUL CELLUCCI  
Lt. Governor

TRUDY COXE  
Secretary

JONATHAN L. HEALY  
Commissioner

**Decision Concerning  
The Wetland Impact Study Conducted  
Pursuant to 333 CMR 11.04(4)(c)(2)**

**PUBLIC UTILITY VEGETATION  
MANAGEMENT PROGRAM FINDING**

Background

The Rights of Way Management (ROW) Regulations (333 CMR 11:00) promulgated in 1987 prohibit the use of herbicides to control vegetation along utility right of ways on or within ten (10) feet of a wetland unless the following conditions are met:

1. Submission of a study, the design of which is subject to prior review and approval of the Departments of Food and Agriculture and Environmental Protection, evaluating impacts of proposed vegetation management programs on wetlands; and
2. A finding by the Department, after consultation with the Advisory Committee, that the proposed vegetation management program will result in less impacts to the wetland than mechanical control.
3. Notwithstanding the above, no herbicides shall be applied on or within ten feet of any standing or flowing water in a wetland.

On April 28, 1988, The Departments of Food and Agriculture and Environmental Protection approved the scope of the study. In the fall of 1989, Environmental Consultants, Inc. submitted to the Department of Food and Agriculture the study entitled, "Study of the Impacts of Vegetation Management Techniques on Wetlands for Utility Rights-of Way in the Commonwealth of Massachusetts", dated June 1989. The Department consulted with the Vegetation Management Plan (VMP) Advisory panel at their November 15, 1989, December 7, 1989 and August 1, 1991 meetings.

The study provided some broad information of vegetation control along utility right of ways. The Department based its finding solely upon the narrow scope of whether the "proposed vegetation management program will result in less impacts to the wetland than mechanical control."

The following are the major evaluation points the Department considered in reaching its decision.

### **What are the Long-term and Short-term Impacts From Herbicide use and Mechanical Control?**

Since wetlands are not a static, unchanging resource, there is some difficulty in determining the actual long-term impacts from the various vegetation control practices. The extent of wetland alterations must be the most important factor in determining impacts. With limited or selective removal of unwanted plant species in specific locations, it appears that long-term impacts are negligible. While mowing or foliar application can damage non-target species, neither control practice appears to result in adverse long-term impacts if they are carefully executed. Clear cutting, however, has a greater impact on wetlands since both wanted and nuisance species are removed.

Although there were some reservations about the sites that were chosen to determine the level of chemical residues, the study did show that there was not a buildup of background residues of herbicides applied from previous practices. However, there were some trace amounts of petroleum products - bar oil or hydraulic fluid found. The source of these petroleum products is unclear and may have been the result of public activities not related to vegetation management. Retrospective analyses for herbicide residues in previously treated wetland areas is not generally applicable since the herbicides used today are less persistent than those which were used previously. However, these analyses did indicate that the herbicides used in the past do not persist in the environment.

The study clearly demonstrated that adjacent non-controlled wetland areas did not differ significantly in composition and abundance of plant species from the controlled areas. The control practices did not appear to impact the entire wetland ecosystem, since a long-term comparison of wetland plant species composition between controlled and non-controlled sites did not differ significantly. Therefore, the long-term effects on the entire wetland ecosystem were considered negligible.



The determination of the short-term impacts to the wetland from the control practices was the most noted short-coming of the study. However, this was not part of the original scope. The VMP Advisory Panel felt, and the Department agreed, that a short-term environmental fate study would be needed.

The first study indicated that certain mechanical control practices can impact wetlands and disrupt the ecosystem to a greater extent than the judicious use of herbicides. While cutting may result in re sprouting of some unwanted vegetation in a manner unlikely to be encountered in unaltered wetland areas, unregulated mechanical vegetation control could result in the destruction of other non-target plant species.

### **What is the Impact to Non-target Wetland Plant Communities?**

Basal and cut stump treatment with low mobility, short persistence herbicides that are judiciously applied usually do not impact adjacent plant species. Likewise careful selective mechanical cutting (versus mowing or clear cutting) also usually does not impact non-target wetland plants. The greatest potential risk to non-target wetland plants comes from mowing, clear-cutting, and high volume foliar applications. Low volume foliar applications in wetlands may also cause non-target impacts if application guidelines are not followed (e.g. no applications during high winds, or without using anti-drift agents, etc.).

### **Is There Enough Information on Which to Base a Finding?**

As in most environmental assessments, a complete database is not available to answer all of the questions posed by the Department and the Vegetation Management Advisory Panel. Some of the questions posed were entirely valid, but were beyond the scope of the approved study.

The study did provide some clear evidence that selective mechanical and herbicide use does minimally alter wetlands by removing specific plant species. Mechanical mowing operations, however, can result in far greater short-term and potentially long-term impacts to wetlands since both wanted and un-wanted plant species are indiscriminately removed. Additionally, foliar herbicide applications may cause short-term impacts to non-target species.

The Department did not find any significant difference in wetland impacts between careful mechanical removal (selective hand cutting) of unwanted species

and, cut stump or basal treatment with herbicides.

There is no assurance that prohibiting the use of herbicides in wetlands will result in careful mechanical control. If herbicide use is prohibited in wetland areas, mechanical control in wetlands will be the only practice available to utilities. Financial pressures and other considerations may force Utilities to increase mowing and / or the use of more destructive non-chemical control practices due to a lack of alternative control techniques.

On August 29, 1991, the Department made a finding that the submitted study met the approved scope. However, although the study contained useful information, it was also determined that additional data needed to be gathered and analyzed because the study was inconclusive in a number of instances.

The Department issued a finding that a proposed vegetation program containing the specific elements listed does not pose an unreasonable adverse impact to wetlands. In addition, the Department required a study be conducted to provide important environmental fate data necessary for the long-term implementation of the rights of way program.

## AUGUST 1991 FINDING

*The Department of Food and Agriculture finds that a proposed vegetation program containing the following elements will not pose an unreasonable adverse impact to wetlands:*

1. *The Integrated pest Management (IPM) system, as described in the Vegetation Management Plan and Yearly Operation Plan, is utilized in wetland areas. The IPM system must, at a minimum, place emphasis on encouraging low growth plant species to discourage unwanted vegetation and, minimizing the frequency and amount of herbicide use by only controlling specific non-conifer tree species which will impact transmission line operation and access to the right of way,*
2. *Herbicides may be applied by basal, cut stump or low volume foliar methods. Foliar applications must include the use of drift reduction agents. Foliar applications may only be conducted in situations where basal and cut stump treatments are not appropriate based on the size of the vegetation and potential for off-target drift. Foliar applications must not result*



*in the off-target drift to non-target species.*

3. *Herbicides are not applied to conifer species (pine, spruce, fir, cedar and hemlock).*
4. *Carriers for herbicides do not contain any of the following petroleum based products: jet fuel, kerosene or fuel oil. Carriers will be subjected to review by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).*
5. *Herbicides must be recommended by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).*
6. *Herbicides may only be applied by hand operated equipment containing no more than 5 gallons of diluent.*
7. *All other restrictions within sensitive areas remain in effect. In accordance with 333 CMR 11.04(1)(c), no person shall apply herbicides for the purposes of clearing or maintaining a right-of-way in such a manner that results in drift to any areas within 10 feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified under 333 CMR 11.04(2)(c)(3).*
8. *Approved Vegetation Management Plans and Yearly Operation Plans must be amended as needed to reflect the conditions of this FINDING.*
9. *The Department further requires that environmental fate data be provided by the utilities that are applying herbicides to rights-of-way, which characterizes the movement of herbicides applied to wetland areas under these conditions. The Department further requires that all study protocols be reviewed by the Vegetation Advisory Panel and be approved by the Department of Food and Agriculture and the Department of Environmental Protection. Failure to submit the required information by the dates outlined in the schedule below will render this finding void.*

*An approvable scope of the study developed and*

*submitted by January 1, 1992.*

*Field data submitted to DFA by October 1, 1992. Data must be consistent with the requirements of the approved scope.*

*Draft study report submitted to DFA by October 1, 1993.*

*Final Report submitted to DFA by March 1, 1994.*

10. *The Department reserves the right to amend or withdraw its FINDING at anytime if it determines that the use of herbicides in wetland areas poses a greater impact than mechanical control or may pose an unreasonable adverse effect to humans or the environment.*

11. *This finding expires December 31, 1994.*

*Therefore, herbicide use may be allowed to control certain vegetation along utility right of ways if the proposed vegetation program as described in the approved Vegetation Management Plan and Yearly Operational Plans contains the above elements.*

On, April 27, 1992, the Departments of Food and Agriculture and Environmental Protection approved the scope of the "*Study of Fates of Herbicides in Wetlands on Electric Utility Rights of Way in the Massachusetts Over the Short Term*". The final report was submitted to the Department of Food and Agriculture December 31, 1993. The Department began reviewing the report in consultation with the VMP Advisory panel.

At the end of 1994, the Department had not completed its review. Therefore, on December 22, 1994 the Department extended the current finding for one year (to December 31, 1995) or until such time it is able to make a final determination, whichever occurs first.



## Fates of Herbicides Over the Short Term Study

The objective of this study was to determine the short term environmental fate and assess the impacts of selected herbicides applied by four common Right-of-Way management techniques. Additionally, the study evaluated which of the four Right-of-Way management techniques provides the most effective control of target vegetation and which techniques produced the least impact on the non-target plant community, and consequently the least alteration of wooded wetland community.

The study investigated the environmental fate of two herbicides, which are typically used to control vegetation on ROWs, and are included in the list recommended for use in sensitive areas. These herbicides were chosen, among other reasons, for their use patterns, size of area treated, and application rates. Accord, which contains the active ingredient glyphosate, is the primary herbicide used for cut stump treatment and is also used for foliar application. Garlon 4, which contains the active ingredient triclopyr, is the primary herbicide used for basal applications. Collectively these products represent the typical herbicides used to control vegetation on ROWs.

### Results

A summary of the most important findings and conclusions of the study include:

\* Based upon the samples collected immediately after application, at 1 week, 1 month, 3 months and 1 year:

- The two herbicides, glyphosate and triclopyr degrade rapidly. Residues reach low quantities quickly, often less than detection limits, within a year.; and
- There is essentially no movement either laterally or vertically from the treated sites by glyphosate. Triclopyr does not move laterally, but was noted to move vertically in small amounts.

\* Drift cards indicate that the herbicides are neither splashed nor carried any distance by the wind. Glyphosate drift is not a significant problem resulting in slight effects on neighboring vegetation and are not detectable in the next year's growth. Sphagnum moss next to trunks treated basally with triclopyr were killed within three months in a 15 cm diameter circle immediately around the target tree, but the dead circle did not continue to enlarge.

\* Filter paper recovered immediately after application of herbicide showed that all methods of application deposit herbicide on the ground. Treated bare soil samples showed as consistent a drop in herbicide concentrations and as little vertical movement as did samples beneath target trees.

\* The use of the herbicides glyphosate and triclopyr at the strengths and application rates used does not pose a risk of accumulation in organically rich soils.

\* Herbicide concentrations in soil continue to decline as time advances.

\* Rainfall occurring more than a week after application does not appear to spread the herbicide nor does groundwater carry any substantial fraction of what has been applied to a particular site down into the soil or horizontally.

\* Based upon the results of the study, an assessment of the environmental fate, and observations of both treatment effectiveness and non-target impacts, an effective and environmentally sensitive ranking from most effective and posing least potential environmental risks to least effective and posing the most environmental risk is suggested:

1. Most effective control and exclusive effect on target:  
low-volume foliar (with glyphosate).
2. Most consistent control with lethal effects on bordering vegetation:  
high-volume foliar (with glyphosate)
3. Total control with rings of dead vegetation around treated trunks:  
low-volume basal (with triclopyr)
4. Incomplete target control and leaving largest soil residues:  
cut-stump (with glyphosate)

It is important to note that the results of the second short term study suggest that the most efficacious application techniques and which pose the lowest environmental risk were not those recommended in the interim finding.



## DEPARTMENT DETERMINATION

Based upon the results of the two ROW impact studies, the general information in the literature, and after consultations with the Vegetation Management Panel, the Department finds that the following proposed vegetation management program will result in less impacts to wetlands than exclusive use of mechanical control methods. Therefore, the Department finds that any vegetation management program that incorporates the conditions under which the study was conducted as well as taking into account the results of previous studies, will result in the least impacts to wetlands.

These conditions include:

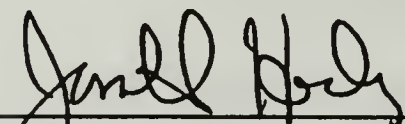
1. An Integrated Pest Management (IPM) system, also known as Integrated Vegetation Management (IVM), as described in the Vegetation Management Plan and Yearly Operation Plan is utilized in wetland areas. The IPM system must, at a minimum, place emphasis on encouraging low growth plant species to discourage unwanted vegetation and, minimizing the frequency and amount of herbicide use by only controlling specific non-conifer tree species which will impact transmission line operation and access to the right of way.
2. Herbicides may be applied by low volume foliar, basal, or cut stump methods. Foliar applications must include the use of appropriate drift reduction agents, and must not result in the off-target drift to non-target species. Basal and cut-stump treatments may be conducted in those situations where the size of the vegetation, potential for off-target drift, or other considerations precludes the use of low-volume foliar applications. Cut stump and basal applications shall be restricted, when practicable, to periods when static ground water levels are low or otherwise when conditions are less susceptible to potential contamination.
3. Herbicides are not applied to conifer species (pine, spruce, fir, cedar and hemlock).
4. Carriers for herbicides do not contain any of the following petroleum based products: jet fuel, kerosene or fuel oil. Carriers will be subjected to review by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).



5. Only herbicides recommended by the Departments of Food and Agriculture and Environmental Protection through 333 CMR 11.04(1)(d) may be used in sensitive areas.
6. Herbicides may only be applied by hand operated equipment containing no more than 5 gallons of diluent.
7. All other restrictions within sensitive areas remain in effect. In accordance with 333 CMR 11.04(1)(c), no person shall apply herbicides for the purposes of clearing or maintaining a right-of-way in such a manner that results in drift to any areas within 10 feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified under 333 CMR 11.04(2)(c)(3).
8. A minimum of twelve months must elapse between herbicide treatments. Only touch-up applications may be performed between twelve and twenty four months.
9. Approved Vegetation Management Plans and Yearly Operation Plans must be amended as needed to reflect the conditions of this determination.

.....

Therefore, herbicide use may be allowed to control certain vegetation along utility right of ways if the proposed vegetation program as described in the approved Vegetation Management Plan and Yearly Operational Plans contains the above elements.

  
Jonathan Healy, Commissioner

10/12/95  
Date

## APPENDIX F

### Glossary of terms

**333 CMR 11.00** - the Commonwealth of Massachusetts regulation for Rights-of-Way Management

**Allelopathy** - the production of phytotoxins by a plant's roots which prohibit the growth of other plant species, e.g. huckleberry and goldenrod

**Back-pack equipment** - low pressure herbicide application equipment carried on the back of an individual, can be operated by either a hand pump or small gasoline powered motor

**Basal treatment** - herbicide application to the lower 6 to 15 inches of a plant stem or trunk starting at the root collar

**Broadcast** - a non-selective herbicide application technique, resulting in application to all vegetation within a defined area

**Brown-out** - the visual coloration of foliage caused by some herbicide applications, leaves and/or stems turn brown causing the right-of-way to take on a brown or mottled appearance

**Brush** - woody stems normally up to 6 inches diameter

**Bulk supply distribution lines** - electrical lines operating at either 13,800 or 23,000 volts, generally on wood poles from 30 to 50 feet tall, these lines normally carry power between substations or to large industrial or commercial customers and are frequently on off-road rights-of-way

**Control** - to kill a plant

**Desirable species** - a plant species that generally does not interfere with the operation or maintenance of a right-of-way, or that competes with and takes up the growing space of undesirable plants; grasses, forbes, herbs and some shrubs are desirable plants

**DFA** - the Massachusetts Department of Food and Agriculture, the state agency responsible for administering the VMP program

**Fee** - a piece of land held in ownership (as opposed to easement rights)

**Foliar treatment** - herbicide application to the leaves of a plant

**General areas** - areas along the right-of-way that are not sensitive or not in prominent public view



**High density** - undesirable brush that covers 66 to 100 percent of an area

**High pressure** - pressure between 60 and 150 pounds per square inch (psi), generally referring to herbicide application operating pressure

**In-lieu-of agreement** - a formal contract between a company that has easement rights to manage its right-of-way and a property owner where the company agrees not to use herbicides in exchange for the property owner agreeing to maintain the right-of-way vegetation

**IVM** - Integrated Vegetation Management, a method of controlling undesirable tree brush on rights-of-way using selective herbicide application, cutting, and cultural control methods

**Local distribution lines** - electrical lines operating from 5,000 to 23,000 volts, generally on wood poles from 30 to 50 feet tall, these lines are normally located along the road and carry power to industrial, commercial, or residential customers

**Low density** - undesirable brush that covers 1 to 33 percent of an area

**Low pressure** - pressure under 60 psi, generally referring to herbicide application operating pressure

**Maintenance agreement** - a formal contract between a company that manages rights-of-way and an individual, municipal or state government agency, or corporation where the parties agree to share the cost of alternative right-of-way management techniques, contracts are negotiated on a case-by-case basis

**Medium density** - undesirable brush that covers 33 to 66 percent of an area

**Point Person** - a member of a right-of-way vegetation management crew that performs a reconnaissance of the right-of-way to look for wetlands and/or sensitive areas prior to the crews performing any vegetation control

**Right-of-way** - a corridor of land over which electric lines are located, the land may be owned by the electric company or by another party which has granted the electric company an easement to construct, access, and maintain the electric wires and facilities

**Right-of-way easement** - a legal contract document that explicitly states the rights of the entity that holds an interest in the land owned by another

**Root-suckering species** - a plant species which can re-generate new above ground stems from its root system, e.g. poplar and beech



**Sensitive area** - areas which warrant special protection to minimize risks of unreasonable adverse effects

**Shrub** - a woody stemmed plant that will generally not grow taller than 20 feet

**Stem treatment** - herbicide application to the stem(s) of a plant

**Substation** - an electrical facility that receives electricity at high voltages and reduces the voltage so that it can be passed on to customers at a lower voltage.

**Target** - any plant which, due to its height and/or density, has the potential to interfere with the operation, inspection, or maintenance of the electrical system facilities

**Translocation** - the movement of herbicide within a plant

**Transmission lines** - high voltage electrical lines operating at voltages ranging from 69,000 to 345,000 volts, constructed on tall (normally in excess of 80 feet) wood or steel structures usually on off-road rights-of-way

**Tree** - a woody stemmed plant generally growing taller than 20 feet tall

**Undesirable species** - see **Target**

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for a systematic approach to data collection and the importance of using reliable sources of information.

3. The third part of the document describes the process of identifying and addressing potential risks and challenges. It stresses the importance of proactive risk management and the need to develop effective strategies to mitigate potential threats.

4. The fourth part of the document discusses the role of communication and collaboration in achieving the organization's goals. It emphasizes the importance of clear communication and the need for all team members to work together effectively.

5. The fifth part of the document provides a summary of the key findings and conclusions of the study. It reiterates the importance of maintaining accurate records and the need for a systematic approach to data collection and analysis.

6. The sixth part of the document includes a list of references and a bibliography. It provides a comprehensive list of all the sources of information used in the study, ensuring that the research is well-documented and credible.

7. The seventh part of the document contains a list of appendices and a glossary. It provides additional information and definitions for the terms and concepts used throughout the document, ensuring that the reader has a clear understanding of the content.

8. The eighth part of the document includes a list of figures and tables. It provides a visual representation of the data collected during the study, making it easier for the reader to understand the results and trends.

9. The ninth part of the document contains a list of footnotes and a list of references. It provides additional information and definitions for the terms and concepts used throughout the document, ensuring that the research is well-documented and credible.

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